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Noise Impact and Land Use Compatibility Study Update – Zoning Amendment Application for Tullis Whistle Bare Aggregate Pit Expansion

Dear Mr. Pidgeon

1. Executive Summary

GHD Ltd. (GHD) was retained by GSP Group Inc. (GSP) to prepare an Updated Noise Impact and Land Use Compatibility Study (Study) for the proposed expansion of the existing Tullis-Whistle Bare Aggregate Pit (Tullis Aggregate Pit/ Facility) located at 1951 Whistle Bare Road in Ayr, Ontario (Site) to account for the proposed expansion of the existing campground property north of the Site. The Key Plan for the Tullis-Whistle Bare Aggregate Pit is shown on Figure 1 of Appendix B.

Operations at the Facility will include the removal, crushing and piling of gravel and soil within the Tullis Aggregate Pit boundaries. The Facility will operate during the daytime hours of 7 a.m. to 5 p.m. As such, GHD has assessed a worst-case hourly operating scenario, considered to be a maximum of 2 trucks/hour entering the Facility, loading material, and exiting the site. Other site equipment, including a loader, crusher or screener and two stockpiling conveyors will be loading or moving the soil into piles during the daytime-only operation hours of 7:00 a.m. to 5:00 p.m.

The noise and dust from the operations has been assessed as being emitted from the Site along the on-site truck route that runs along the northern area of the pit. The worst-case operating areas for noise are located on the northern property line south of the residences and campsites on Whistle Bare Road, along the eastern property line west of residences on Whistle Bare Road, and along the southern property line, north of a cluster of residences on Roseville Road. These operating scenarios are identified on Figures 1A through 1C as "Working Scenario 1 - North", "Working Scenario 2 – East " and "Working Scenario 3 - South".

The results of the Study indicate that the steady state sound emitted from operations at the Site show compliance with the Ministry of Environment, Conservation and Parks (MECP) publication "NPC-300, ‘Environmental Noise Guidelines – Stationary and Transportation Sources – Approval and Planning" (August 2013) at the existing worst-case points-of-reception (PORs) with administrative controls and perimeter berms as detailed in this Study.

This Study has been updated based on the campground expansions and the following updates were incorporated:

1. Addition of POR10 to represent the worst-case potential trailer/residence location
2. Addition of POR11 to represent the worst-case potential overnight site location
3. Addition of POR5b to represent the backyard of 1775 Whistle Bare Rd
4. Berm#1 was updated to increase the height of the berm elements to 5.25 (0.25 m increase) in the middle of the berm and increasing the berm elements length by 23 metres
5. Berm#2 was updated to increase the height of the berm elements to 5.25 (0.25 m increase) on the east elements

The following appendices are included in support of this Study:

– Appendix A – Zoning Map/ D-6 Setbacks
– Appendix B – Best Management Practices Plan for Control of Fugitive Dust Emissions
– Appendix C – Off-Site Stationary Noise Modelling Sound Levels and Results
– Appendix D – CadnaA Sample Calculation
– Appendix E – Consultant's Declaration
– Appendix F – Owner's Statement

2. Introduction

The Study presented herein provides an evaluation of the potential noise impacts at the sensitive receptors located nearest to the Facility, including two new receptors for the campground expansion north of the Site. The Study was prepared consistent with the following MECP guidance:

– NPC-103, "Procedures", August 1978
– NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October 1995
– NPC-300, "Stationary and Transportation Sources – Approval and Planning", August 2013
– "Appendix A- Supporting Information for An Acoustic Assessment Report or Vibration Assessment Report Required by A Basic Comprehensive C of A" as specified in the MECP guidance entitled "Basic Comprehensive certificates of Approval (Air) – User Guide", April 2004

3. Site Description and Guideline D-6 Evaluation

The Site is located in the Township of North Dumfries, which is part of The Regional Municipality of Waterloo. The significant noise sources are identified on Figure 1 of Appendix B. The Site property is zoned as Agricultural. The area west and east of the site is zoned as Mineral Aggregates and the rest of the surrounding area is zoned as Agricultural. A key plan showing the Site location and zoning is provided in Appendix A as Figure A.1.The Site is considered to be located in an Acoustical Class 2 area defined by NPC-300 as an acoustical environment that has qualities representative of both Class 1 and Class 3 areas; where the background sound level is dominated by the activities of people; usually road or rail traffic during the daytime hours of 7:00 to 19:00, and low evening background sound level defined by natural environment and infrequent human activity from 19:00 to 23:00. The background noise is primarily from the 401 located to the west of the Facility.

Site activities include removal, crushing and piling of gravel and soil within the Tullis Aggregate Pit boundaries. Key topographic conditions including the berms along the northern property boundary and the relative ground

elevation of sensitive points-of-reception have been considered in this Study and have been included in the Cadna A acoustic modeling parameters described in Section 6.

The proposed acquisition lands include the lot 109 property which is currently zoned Zone 1 - Agricultural and subject of this proposed zoning amendment application to covert the lands to Zone 14 Mineral Aggregates. The zoning and D-6 setback distances are detailed on Figure A.1.

3.1 Guideline D-6

The MECP Guideline D-6 provides minimum setback distances and potential areas of influence based on the class of the industrial facility. Recommended minimum separation distances are provided based on the industry size and operation type. The guideline provides direction for land use planning to maximize compatibility of industrial uses with adjacent land uses. The goal of Guideline D-6 is to minimize encroachment of sensitive land uses on industrial facilities and vice versa, in order to address potential incompatibility due to adverse effects such as noise, odour, and dust.

Guideline D-6 separates industry into three broad categories, depending on the nature of their operations and the types of potential impacts:

– **Class I facilities** are small scale, self-contained plants or buildings, which produce and store products internally, and have low probability of fugitive emissions. They have daytime operations only, with infrequent movements of products and/or heavy trucks. Some examples include furniture repair and refinishing, electronics manufacturing, auto parts supply, distribution of dairy products, and beverages bottling.
– **Class II facilities** perform medium scale processing, with frequent and occasionally intense odour, and a low probability of fugitive emissions. Activities may include some outdoor storage of wastes and materials, frequent movement of products and/or heavy trucks, and shift work. Some examples include paint spray booths, feed packing plant, dairy product manufacturing, and dry cleaning services.
– **Class III facilities** conduct large scale manufacturing, and are characterized by persistent and/or intense dust and/or odour, frequent outputs of major annoyances, and have a high probability of fugitive emissions. Activities may include continuous operations and movements of products, outside storage of raw and finished goods, and high levels of production. Some examples include manufacturing of paint and varnish, manufacturing of resins and coatings, solvent recovery plants, organic chemicals manufacturing, breweries, and metal manufacturing.

The following table summarizes the recommended minimum setback distances and areas of potential influence which represents the distance within which adverse effects could potentially occur.

Table 3.1 D 6 Industry Separation Distances

Industry Classification	Recommended Minimum Setback Distance (m)	Potential Area of Influence (m)
Class I: Light industry	20	70
Class II: Medium Industry	70	300
Class III: Heavy Industry	**300**	**1,000**

According to MECP Guideline D-6 under Section **1.2.4 Other facilities** the MECP recommends that Pits and Quarry's be classified as a Class **III** industrial facility with the associated recommended minimum separation distances.

Based on this classification, the applicable minimum recommended separation distance is 300 metres (m) to the nearest sensitive land uses. The classification also specifies a potential environmental influence distance of 1,000 m, which means that any sensitive land use within this area may experience environmental impacts.

Based on the above, there are sensitive land uses within 300 m of the proposed operations.

Regardless of the separation distances, Section 4.10.3 of the D-6 Guideline allows the proponent to provide a justifying detailed impact assessment to support an application for a change in land use. As noise is expected to be the most significant impact on the Site, a detailed noise impact assessment is provided in Section 6 to meet this requirement.

4. Dust Assessment

Due to the nature of the operations there is the potential for fugitive dust emissions to be generated.

GHD has prepared a Best Management Practices Plan for Control of Fugitive Dust Emissions (BMPP) for the proposed operations at the Site. By controlling the potential for dust emissions at the source the Facility will minimize the impact for air emissions from the Site and will not be expected to have an impact at any off-Site locations. The BMPP is provided under a separate cover in Appendix B.

GHD is not aware of any dust complaints regarding the existing Facility.

5. Odour Assessment

Based on GHD's knowledge and nature of the proposed operations there will be no odour emissions and the future potential for odourous emissions is very low. Therefore, the Facility is not expected to be a significant odour source.

GHD is not aware of any odour complaints regarding the existing operations.

6. Noise Impact Methodology

This Study focuses on the sound emissions from the significant noise sources identified at the Facility with the potential to adversely impact the sensitive receptors. The significant noise sources are identified in the Noise Source Summary Table 1 and the locations are identified on Figure 1A-1C.

Excavated topography was selected to evaluate the worst-case noise impact exposure for off-site residences based on the excavation operations. Soil and gravel removal activities located at the northern border of the site were considered based on the proximity to the nearest and most exposed off-site residential dwellings.

Representative data from GHD's noise library and published reference materials were used to assess the worst-case potential environmental noise impact from the on-Site equipment.

Cadna A Acoustical Modelling Software (Cadna A) version 2023 was used to model the potential impacts of the significant noise sources. Cadna A calculates sound level emissions based on the ISO 9613-2 standard "Acoustics – Attenuation of sound during Propagation Outdoors".

The worst-case cumulative Facility-wide sound levels estimated at the receptor(s) include attenuation affects due to geometric divergence, atmospheric attenuation, barriers/berms, ground absorption and directivity, as applicable for all significant sources.

Cadna A modelling assumptions used in this Study are presented below:

– **Noise Sources**: All sources were modelled using the 1/1 octave band data source measurements; and reference materials.
– **Reflection Order**: A maximum reflection order of 2 was used to evaluate indirect noise impact from one reflecting surface.

– **Ground Absorption**: The model included soft/porous ground (G=1), gravel (G=0.5) and pavement (G=0.25).
– **Receptor Elevation**: POR receptor heights were modelled appropriately to represent the worst-case elevation.
– **Associated Site Terrain**: Contour lines up to 200 m around the site were used and Site topography was considered. GHD has used a worst-case operating floor of 305 m above sea level (ASL) once the overburden has been removed relative to the general surface grading of ~ 312 m ASL.

6.1 Noise Sources

The following sources were identified as steady-state noise sources on site and were assessed as part of the Study:

– Front End Loader/Excavator Working Stationary (Source S1) – 107.4 dBA
– Crusher or Screener (Source S2) – 114.7 dBA
– Stockpiling Conveyor (Source S3) – 107.8 dBA
– On-site Truck Route – 4 per hour (Source T1) – 109.9 dBA
– Front End Loader/Excavator breakout and movement (T2) – 115 dBA

The noise source data is provided in Appendix C.

7. Point-of-Reception

The identification of appropriate sensitive point(s)-of-reception is necessary to conduct the Study for the Facility. A "point-of-reception" is any point on the premises of a person where sound, originating from other than those premises, is received. The point-of-reception may be located on permanent or seasonal residences, hotels/motels, nursing/retirement homes, rental residences, hospitals, campgrounds, schools, or places of worship.

The objective of this Study is to determine the predictable worst-case 1-hour equivalent sound level (1-hour Leq) at the existing worst-case point(s)-of-reception. The existing worst-case is defined as the sensitive receptors with the greatest exposure to the Facility noise sources due to proximity and direct line-of-sight exposure.

The worst-case sensitive point(s)-of-reception (POR) are:

– POR1 – Nearest façade of a two-storey residence on Whistle Bare Road north of the Site (4.5 m AG)
– POR2 – Nearest façade of a two-storey residence on Whistle Bare Road north of the Site (4.5 m AG)
– POR3 – Nearest façade of a single-storey residence on Whistle Bare Road north of the Site (1.5 m AG)
– POR4 – Nearest façade of a two-storey residence on Whistle Bare Road north of the Site (4.5 m AG)
– POR5a – Nearest façade of a one-storey residence on Whistle Bare Road east of the Site (1.5 m AG)
– POR5b – Backyard of a residence on Whistle Bare Road east of the Site (1.5 m AG)
– POR6 – Nearest façade of a two-storey residence on Whistle Bare Road east of the Site (4.5 m AG)
– POR7 – Nearest façade of a single-storey residence on Roseville Road south of the Site (4.5 m AG)
– POR8 – Nearest façade of a two-storey residence on Roseville Road approximately south of the Site (4.5 m AG)
– POR9 – Nearest façade of a one-storey residence on Roseville Road south of the Site (1.5 m AG)
– POR10 – Nearest edge of campground limits on Whistle Bare Road northeast of the Site (1.5 m AG)
– POR11 – Nearest edge of campground limits on Whistle Bare Road northwest of the Site (1.5 m AG)

Elevated residential POR locations evaluated to determine the worst-case receptor. The location of the worst case PORs are identified on Figure 2.

All POR locations within 500 m of the Facility were considered; however, the noise impact at only the worst-case and most exposed PORs during the daytime operations are presented herein.

GHD recognizes the existing farmhouse still located on the property extents (south side of Whistle Bare Road across from POR4) and has not included this non-conforming receptor as it is scheduled to be demolished once the excavation reaches that point and NPC-300 does not require an evaluation of a receptor on the property from which the noise originates *"A land use that would normally be considered noise sensitive, such as a dwelling, but is located within the property boundaries of the stationary source is not considered a noise sensitive land use."*

8. Assessment Criteria

The Facility is located in an Acoustic Class 2 Area. Class 2 Areas have the following minimum sound level limits expressed as a 1-hour Leq that can be applied to assess the sound levels emitted by the Facility noise sources:

Time of Day	Sound Level Limits (Leq)	
	Plane of Window	Outdoor Point of Reception
7:00 a.m. to 7:00 p.m.	50 dBA	50 dBA
7:00 p.m. to 11:00 p.m.	50 dBA	45 dBA
11:00 p.m. to 7:00 a.m.	45 dBA	N/A

The applicable noise criteria at the points-of-reception are based on the higher of the background sound level and the MECP's minimum sound level limits. GHD has used the minimum MECP daytime noise limits to be conservative as the Site will only operate during daytime hours.

9. Impact Assessment

Based on the model assumptions summarized above, the worst-case predicted noise levels at all of the worst-case PORs are within the minimum MECP daytime sound level limits summarized in Tables 2a to 2c. Therefore, based on this preliminary noise impact assessment, the proposed operation is compatible with the existing sensitive land uses in the area with respect to the noise requirements of NPC-300.

Predicted noise levels at each of the PORs from each of the evaluated operating scenarios are summarized in Tables 2a to 2c and noise contour plots are included as Figures C.1, C.2 and C.3 in Appendix C.

9.1 Scenario 1 – Worst-case Operating Location for Existing PORs North of the Site

Scenario 1 is the proposed operations modelled at the worst-case location south of the residences and campsites along Whistle Bare Road to the north of the Site utilizing the proposed equipment operating within site property line with the exception of the crusher or screener equipment which is restricted to the setback operating boundaries as detailed in Figure 1A.

A summary of sound levels for Scenario 1 can be found in Table 2a.

9.2 Scenario 2 –Worst-case Operating Location for Existing PORs East of the Site

Scenario 2 is the proposed operations modelled at the worst-case location for the residences along Whistle Bare Road to the east of the site utilizing the proposed equipment operating within site property line with the exception of the crusher or screener equipment which is restricted to the setback operating boundary's as detailed in Figure 1B.

A summary of sound levels for Scenario 2 can be found in Table 2b.

9.3 Scenario 3 – Worst-case Operating Location for Existing PORs South of the Site

Scenario 3 is the proposed operations modelled at the worst-case location south of the Site for the cluster of residences along Roseville Road utilizing the proposed equipment operating within site property line with the exception of the crusher or screener equipment which is restricted to the setback operating boundaries as detailed in Figure 1C. A summary of sound levels for Scenario 3 can be found in Table 2c.

Administrative Controls and Proposed Property Line Noise Berms

The following controls are proposed to ensure compliance at existing PORs. They are to be enforced during daytime periods unless otherwise indicated below.

Vehicle Tail Gate "Banging"

At times, trucks unloading material sometimes allow the rear tailgate to fall creating a banging noise. The Facility will implement an administrative control to completely restrict the banging of tailgates by any vehicle entering the Facility. This policy will be posted at the entrance to the Site and to instruct all drivers and ensure compliance.

Restricted Operating Boundary for Crusher or Screener Equipment

GHD recommends that the crushing operations which include the crusher, screener and two stockpiling conveyors (Sources S2 to S5) have a minimum operational set back distance of 90m from the eastern berm.

Required Property Line Noise Berms

Berm#1 Northern Property Line

GHD recommends the construction of a 514 m long, 4 m tall (315.14 m to 316.85 m ASL) berm along the northern property boundary. This berm will have a portion in the middle that is 191 m long and extends an additional 1.25 metres tall (5.25 m total equal to 317.25 m ASL) as detailed on Figures 1A-1C.

Berm#2 North & Eastern Property Line

GHD recommends the construction of a 678 m long, 4m tall (314.15 m to 316.25 m ASL) berm along the northern and eastern property boundary. This berm will have a portion on the western side that is lower and only requires a height of 3 m (314.67 m to 315.16 m ASL) and a portion on the far east property line that extends to a total height of 5.25 m tall (315.67 m – 317.25m ASL) as detailed on Figures 1A-1C.

The evaluated operating scenario's 1,2 and 3 and associated results are inclusive of these recommended berms in place. With the implementation of the above noise control measures the sound levels estimated at the existing PORs are below the minimum MECP sound level limits for all operating scenarios, as summarized in Table 3.

10. Conclusions

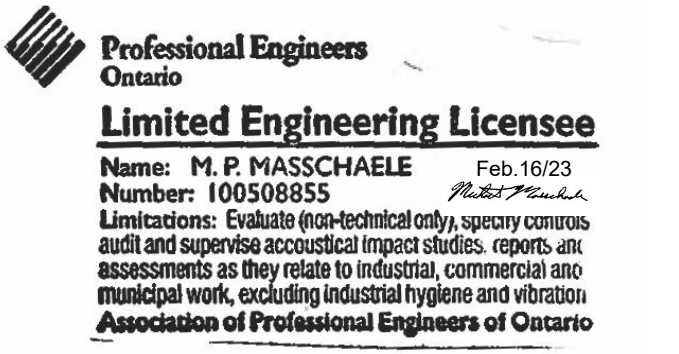
Based on Guideline D-6, the Development does not meet the recommend setback distances for Class 3 industrial development as there are other existing and approved residential uses at similar setback distances from these lands.

The results of this Study are updated from the previous iteration to include two new receptors that represent the new extents of the campground north of the site. The results indicate that there is potential for stationary noise and dust impacts as the proposed operations is within the minimum recommended separation distance of 300 m for Class III industries. However, the proposed Site is feasible if the impacts are minimized through the implementation of administrative controls, adjusted property line noise berms and suitable dust mitigation measures, which should be confirmed with the owner/operator at the detailed design stage.

The ownership of Tullis-Whistle Bare Aggregate Pit has confirmed that the noise abatement measures are feasible and will be implemented during Site development prior to operation.

Should you have any questions on the above, please do not hesitate to contact us.

Regards



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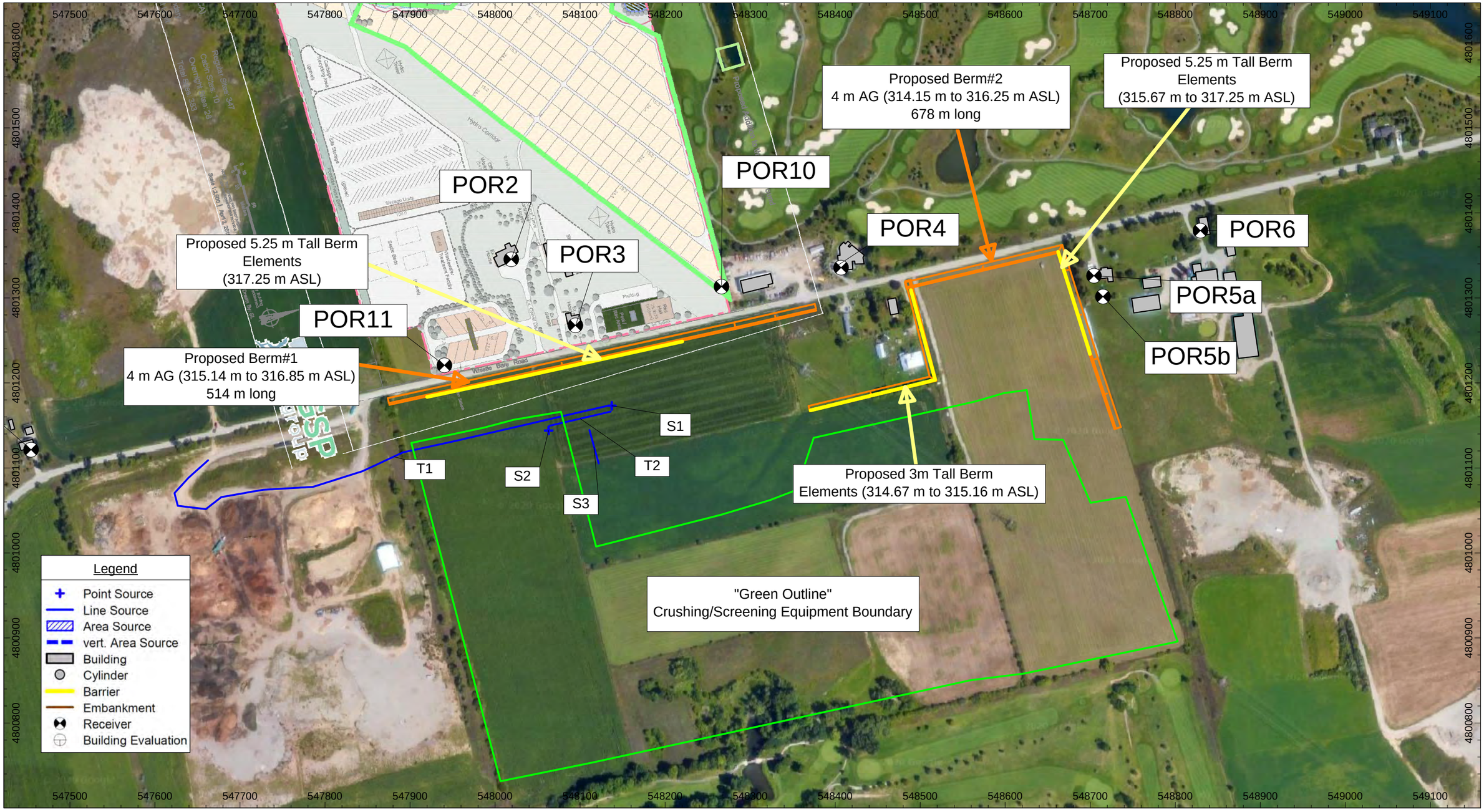

Source: Google Satellite

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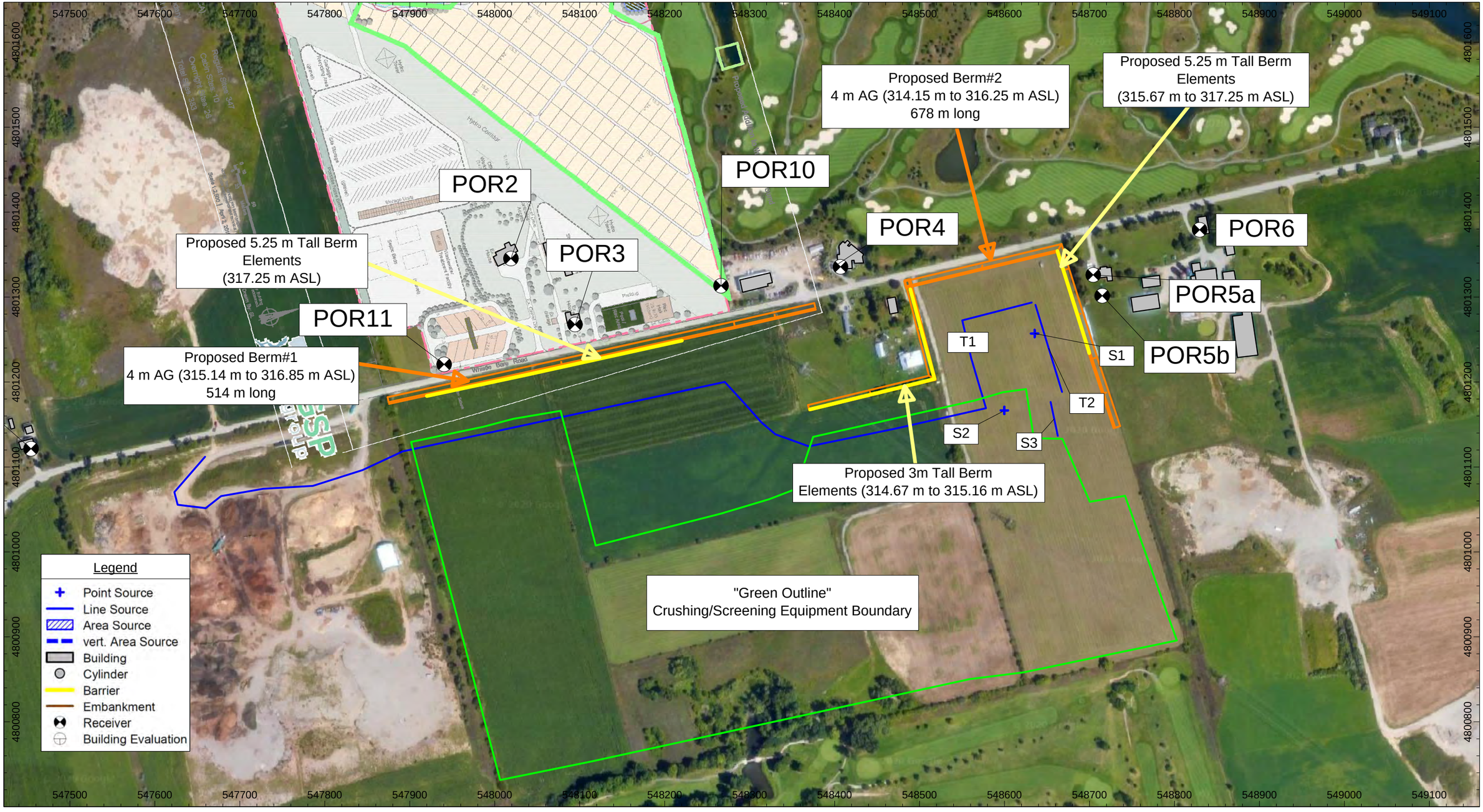
NOISE IMPACT AND LAND COMPATIBILITY STUDY
TULLIS-WHISTLE BARE AGGREGATE PIT EXPANSION
1951 WHISTLE BARE ROAD, AYR, ONTARIO

PROJ#11220330
14.02.2023

NOISE SOURCE LOCATION PLAN - Scenario 1 - NORTH

FIGURE 1A



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NOISE IMPACT AND LAND COMPATIBILITY STUDY
TULLIS-WHISTLE BARE AGGREGATE PIT EXPANSION
1951 WHISTLE BARE ROAD, AYR, ONTARIO

NOISE SOURCE LOCATION PLAN - Scenario 2 - EAST

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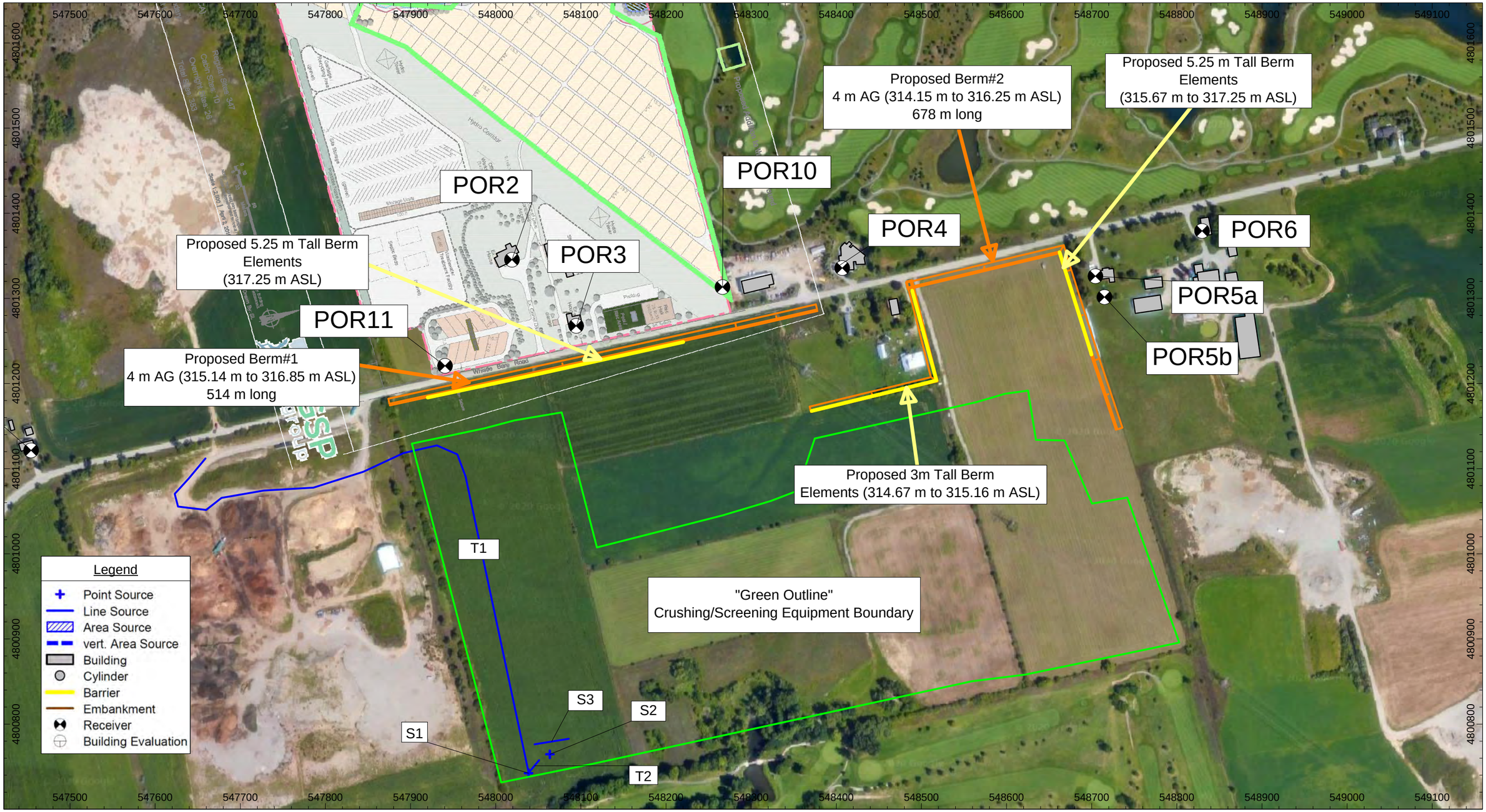
FIGURE 1B



Source: Google Satellite

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NOISE IMPACT AND LAND COMPATIBILITY STUDY
TULLIS-WHISTLE BARE AGGREGATE PIT EXPANSION
1951 WHISTLE BARE ROAD, AYR, ONTARIO

NOISE SOURCE LOCATION PLAN - Scenario 3 - SOUTH

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14.02.2023

FIGURE 1C

Source: Google Satellite

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NOISE IMPACT AND LAND COMPATIBILITY STUDY
TULLIS-WHISTLE BARE AGGREGATE PIT EXPANSION
1951 WHISTLE BARE ROAD, AYR, ONTARIO

POINT OF RECEPTION LOCATION PLAN

PROJ#1122(
14.02.2023

FIGURE 2

Table 1

Noise Source Summary
GSP Group Inc.
Tullis-Whistle Bare Aggregate Pit Expansion, Ayr, Ontario

Cadna A ID	Source Description	Sound Power Level[1] (dBA)	Source Characteristics[2]	Source Location[3]	Noise Control Measures[4]	Source Type
Steady State Sources						
01_S1	Loader/Excavator	107.5	S	O	U	Point
01_S2	Crusher	114.7	S	O	U	Point
01_S3	Stockpiling Conveyor Belt	107.8	S	O	U	Line
01_T1	Truck Route	109.9	S	O	U	Line
01_T2	Loader Route	115.0	S	O	U	Line
02_S1	Loader/Excavator	107.5	S	O	U	Point
02_S2	Crusher	114.7	S	O	U	Point
02_S3	Stockpiling Conveyor Belt	107.8	S	O	U	Line
02_T1	Truck Route	109.9	S	O	U	Line
02_T2	Loader Route	115.0	S	O	U	Line
03_S1	Loader/Excavator	107.5	S	O	U	Point
03_S2	Crusher	114.7	S	O	U	Point
03_S3	Stockpiling Conveyor Belt	107.8	S	O	U	Line
03_T1	Truck Route	109.9	S	O	U	Line
03_T2	Loader Route	115.0	S	O	U	Line

Notes:

[1] Sound Power Level (PWL) in dBA, excludes +5 dBA total penalty if applicable.
[2] Sound characteristics:
- S – Steady
- Q – Quasi-steady impulsive
- I – Impulsive
- B – Buzzing
- T – Tonal
- C – Cyclic

[3] Source location:
- O – Outside of building
- I – Inside of building

[4] Noise control measures:
- S – Silencer, acoustic louvre, muffler
- A – Acoustic lining, plenum
- B – Barrier, berm, screening
- L – Lagging
- E – Acoustic enclosure
- O – Other
- U – Uncontrolled
- AC – Administrative control

Table 2a

Point of Reception Noise Impact – Scenario1
GSP Group Inc.
Tullis-Whistle Bare Aggregate Pit Expansion, Ayr, Ontario

Cadna A ID	Source Description	2028 Whistle Bare Rd - South Facade POR1				Campground Southeast Limits POR10				Campground Southwest Limits POR11				1912 Whistle Bare Rd - South Facade POR2			
		Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am	Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am	Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am	Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am
Steady State Noise Impact																	
01-S1	Loader/Excavator	685	32.6	32.6	32.6	191	40.9	40.9	40.9	203	39.0	39.0	39.0	209	37.0	37.0	37.0
01-S2	Crusher	609	41.2	41.2	41.2	265	48.2	48.2	48.2	145	47.3	47.3	47.3	206	45.7	45.7	45.7
01-S3	Stockpiling Conveyor Belt	662	38.7	38.7	38.7	240	42.3	42.3	42.3	200	39.1	39.1	39.1	241	39.3	39.3	39.3
01-T1	Truck Route	178	37.1	37.1	37.1	194	31.8	31.8	31.8	90	35.1	35.1	35.1	194	32.0	32.0	32.0
01-T2	Loader Route	647	26.6	26.6	26.6	228	34.8	34.8	34.8	172	34.2	34.2	34.2	204	32.7	32.7	32.7
Total Facility Sound Level (1-hour Leq):			**44.5**	**44.5**	**44.5**		**50.0**	**50.0**	**50.0**		**48.8**	**48.8**	**48.8**		**47.3**	**47.3**	**47.3**

Cadna A ID	Source Description	1898 Whistle Bare Rd - South Facade POR3				1820 Whistle Bare Rd - West Facade POR4				1775 Whistle Bare Rd - West Facade POR5a				1775 Whistle Bare Rd - Backyard POR POR5b			
		Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am	Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am	Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am	Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am
Steady State Noise Impact																	
01-S1	Loader/Excavator	104	41.1	41.1	41.1	315	40.5	40.5	40.5	587	28.4	28.4	28.4	592	29.0	29.0	29.0
01-S2	Crusher	128	48.0	48.0	48.0	394	45.7	45.7	45.7	667	35.2	35.2	35.2	671	35.9	35.9	35.9
01-S3	Stockpiling Conveyor Belt	145	40.2	40.2	40.2	359	40.4	40.4	40.4	622	27.9	27.9	27.9	624	28.9	28.9	28.9
01-T1	Truck Route	101	33.3	33.3	33.3	319	29.7	29.7	29.7	592	21.8	21.8	21.8	596	22.3	22.3	22.3
01-T2	Loader Route	108	36.4	36.4	36.4	355	32.3	32.3	32.3	627	23.6	23.6	23.6	631	23.5	23.5	23.5
Total Facility Sound Level (1-hour Leq):			**49.7**	**49.7**	**49.7**		**48.0**	**48.0**	**48.0**		**37.0**	**37.0**	**37.0**		**37.7**	**37.7**	**37.7**

Cadna A ID	Source Description	1755 Whistle Bare Rd - West Facade POR6				1992 Roseville Rd - North Facade POR7				1998 Roseville Rd - North Facade POR8				2020 Roseville Rd - North Facade POR9			
		Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am	Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am	Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am	Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am
Steady State Noise Impact																	
01-S1	Loader/Excavator	722	32.1	32.1	32.1	879	29.1	29.1	29.1	859	30.2	30.2	30.2	884	29.0	29.0	29.0
01-S2	Crusher	802	38.3	38.3	38.3	880	36.4	36.4	36.4	851	42.1	42.1	42.1	867	36.6	36.6	36.6
01-S3	Stockpiling Conveyor Belt	757	32.4	32.4	32.4	841	30.6	30.6	30.6	818	31.5	31.5	31.5	839	30.6	30.6	30.6
01-T1	Truck Route	727	23.3	23.3	23.3	881	22.7	22.7	22.7	860	25.8	25.8	25.8	879	23.3	23.3	23.3
01-T2	Loader Route	762	25.1	25.1	25.1	878	20.8	20.8	20.8	854	23.9	23.9	23.9	874	20.8	20.8	20.8
Total Facility Sound Level (1-hour Leq):			**40.3**	**40.3**	**40.3**		**38.2**	**38.2**	**38.2**		**42.9**	**42.9**	**42.9**		**38.3**	**38.3**	**38.3**

Note:

[1] Sound level at the receptor was calculated using Cadna A acoustical modelling software.

Table 2b

Point of Reception Noise Impact – Scenario2
GSP Group Inc.
Tullis-Whistle Bare Aggregate Pit Expansion, Ayr, Ontario

Cadna A ID	Source Description	2028 Whistle Bare Rd - South Facade POR1 Distance (m)	POR1 Partial Sound Levels[1] (dBA) Day 7am–7pm	POR1 Evening 7pm–11pm	POR1 Night 11pm–7am	Campground Southeast Limits POR10 Distance (m)	POR10 Partial Sound Levels[1] (dBA) Day 7am–7pm	POR10 Evening 7pm–11pm	POR10 Night 11pm–7am	Campground Southwest Limits POR11 Distance (m)	POR11 Partial Sound Levels[1] (dBA) Day 7am–7pm	POR11 Evening 7pm–11pm	POR11 Night 11pm–7am	1912 Whistle Bare Rd - South Facade POR2 Distance (m)	POR2 Partial Sound Levels[1] (dBA) Day 7am–7pm	POR2 Evening 7pm–11pm	POR2 Night 11pm–7am
Steady State Noise Impact																	
02_S1	Loader/Excavator	1189	26.2	26.2	26.2	373	28.8	28.8	28.8	696	27.5	27.5	27.5	623	30.5	30.5	30.5
02_S2	Crusher	1146	34.4	34.4	34.4	364	41.5	41.5	41.5	662	36.0	36.0	36.0	608	39.2	39.2	39.2
02_S3	Stockpiling Conveyor Belt	1202	29.3	29.3	29.3	412	37.1	37.1	37.1	716	30.2	30.2	30.2	659	33.1	33.1	33.1
02_T1	Truck Route	181	37.3	37.3	37.3	121	37.7	37.7	37.7	91	36.3	36.3	36.3	195	33.9	33.9	33.9
02_T2	Loader Route	1195	21.9	21.9	21.9	371	26.4	26.4	26.4	712	23.0	23.0	23.0	621	27.6	27.6	27.6
Total Facility Sound Level (1-hour Leq):			**39.8**	**39.8**	**39.8**		**44.2**	**44.2**	**44.2**		**40.0**	**40.0**	**40.0**		**41.6**	**41.6**	**41.6**

Cadna A ID	Source Description	1898 Whistle Bare Rd - South Facade POR3 Distance (m)	POR3 Partial Sound Levels[1] (dBA) Day 7am–7pm	POR3 Evening 7pm–11pm	POR3 Night 11pm–7am	1820 Whistle Bare Rd - West Facade POR4 Distance (m)	POR4 Partial Sound Levels[1] (dBA) Day 7am–7pm	POR4 Evening 7pm–11pm	POR4 Night 11pm–7am	1775 Whistle Bare Rd - West Facade POR5a Distance (m)	POR5a Partial Sound Levels[1] (dBA) Day 7am–7pm	POR5a Evening 7pm–11pm	POR5a Night 11pm–7am	1775 Whistle Bare Rd - Backyard POR POR5b Distance (m)	POR5b Partial Sound Levels[1] (dBA) Day 7am–7pm	POR5b Evening 7pm–11pm	POR5b Night 11pm–7am
Steady State Noise Impact																	
02_S1	Loader/Excavator	541	29.7	29.7	29.7	242	26.4	26.4	26.4	98	41.4	41.4	41.4	91	41.7	41.7	41.7
02_S2	Crusher	515	36.3	36.3	36.3	257	32.6	32.6	32.6	191	46.0	46.0	46.0	178	47.7	47.7	47.7
02_S3	Stockpiling Conveyor Belt	568	30.6	30.6	30.6	297	23.4	23.4	23.4	161	40.3	40.3	40.3	142	41.9	41.9	41.9
02_T1	Truck Route	104	35.6	35.6	35.6	163	34.8	34.8	34.8	100	31.9	31.9	31.9	108	32.7	32.7	32.7
02_T2	Loader Route	543	25.3	25.3	25.3	262	22.5	22.5	22.5	80	38.3	38.3	38.3	79	39.1	39.1	39.1
Total Facility Sound Level (1-hour Leq):			**40.1**	**40.1**	**40.1**		**37.5**	**37.5**	**37.5**		**48.6**	**48.6**	**48.6**		**50.0**	**50.0**	**50.0**

Cadna A ID	Source Description	1755 Whistle Bare Rd - West Facade POR6 Distance (m)	POR6 Partial Sound Levels[1] (dBA) Day 7am–7pm	POR6 Evening 7pm–11pm	POR6 Night 11pm–7am	1992 Roseville Rd - North Facade POR7 Distance (m)	POR7 Partial Sound Levels[1] (dBA) Day 7am–7pm	POR7 Evening 7pm–11pm	POR7 Night 11pm–7am	1998 Roseville Rd - North Facade POR8 Distance (m)	POR8 Partial Sound Levels[1] (dBA) Day 7am–7pm	POR8 Evening 7pm–11pm	POR8 Night 11pm–7am	2020 Roseville Rd - North Facade POR9 Distance (m)	POR9 Partial Sound Levels[1] (dBA) Day 7am–7pm	POR9 Evening 7pm–11pm	POR9 Night 11pm–7am
Steady State Noise Impact																	
02_S1	Loader/Excavator	230	35.9	35.9	35.9	936	28.4	28.4	28.4	969	33.3	33.3	33.3	1045	27.0	27.0	27.0
02_S2	Crusher	313	44.5	44.5	44.5	840	36.8	36.8	36.8	872	41.7	41.7	41.7	947	35.4	35.4	35.4
02_S3	Stockpiling Conveyor Belt	270	35.3	35.3	35.3	827	30.2	30.2	30.2	866	30.5	30.5	30.5	948	29.7	29.7	29.7
02_T1	Truck Route	257	32.2	32.2	32.2	791	26.9	26.9	26.9	795	29.7	29.7	29.7	843	26.7	26.7	26.7
02_T2	Loader Route	214	31.3	31.3	31.3	923	21.9	21.9	21.9	958	24.4	24.4	24.4	1035	20.6	20.6	20.6
Total Facility Sound Level (1-hour Leq):			**45.8**	**45.8**	**45.8**		**38.6**	**38.6**	**38.6**		**42.9**	**42.9**	**42.9**		**37.4**	**37.4**	**37.4**

Note:

[1] Sound level at the receptor was calculated using Cadna A acoustical modelling software.

Table 2c

Point of Reception Noise Impact – Scenario3
GSP Group Inc.
Tullis-Whistle Bare Aggregate Pit Expansion, Ayr, Ontario

Cadna A ID	Source Description	2028 Whistle Bare Rd - South Facade POR1				Campground Southeast Limits POR10				Campground Southwest Limits POR11				1912 Whistle Bare Rd - South Facade POR2			
		Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am	Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am	Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am	Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am
Steady State Noise Impact																	
03_S1	Loader/Excavator	696	37.8	37.8	37.8	615	39.1	39.1	39.1	488	33.6	33.6	33.6	603	34.4	34.4	34.4
03_S2	Crusher	706	45.0	45.0	45.0	585	47.0	47.0	47.0	473	41.1	41.1	41.1	583	42.1	42.1	42.1
03_S3	Stockpiling Conveyor Belt	701	38.7	38.7	38.7	570	40.9	40.9	40.9	459	34.7	34.7	34.7	568	35.9	35.9	35.9
03_T1	Truck Route	181	38.2	38.2	38.2	372	32.5	32.5	32.5	99	35.0	35.0	35.0	236	33.5	33.5	33.5
03_T2	Loader Route	698	23.1	23.1	23.1	604	24.5	24.5	24.5	481	20.0	20.0	20.0	595	21.2	21.2	21.2
Total Facility Sound Level (1-hour Leq):			**47.2**	**47.2**	**47.2**		**48.6**	**48.6**	**48.6**		**43.3**	**43.3**	**43.3**		**44.0**	**44.0**	**44.0**

Cadna A ID	Source Description	1898 Whistle Bare Rd - South Facade POR3				1820 Whistle Bare Rd - West Facade POR4				1775 Whistle Bare Rd - West Facade POR5a				1775 Whistle Bare Rd - Backyard POR POR5b			
		Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am	Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am	Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am	Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am
Steady State Noise Impact																	
03_S1	Loader/Excavator	528	34.6	34.6	34.6	698	37.4	37.4	37.4	886	29.2	29.2	29.2	878	29.5	29.5	29.5
03_S2	Crusher	504	42.3	42.3	42.3	666	45.3	45.3	45.3	852	36.9	36.9	36.9	844	37.2	37.2	37.2
03_S3	Stockpiling Conveyor Belt	489	36.1	36.1	36.1	645	39.0	39.0	39.0	841	30.8	30.8	30.8	833	31.1	31.1	31.1
03_T1	Truck Route	207	33.4	33.4	33.4	504	30.9	30.9	30.9	777	23.2	23.2	23.2	781	24.2	24.2	24.2
03_T2	Loader Route	519	20.0	20.0	20.0	687	22.7	22.7	22.7	875	15.4	15.4	15.4	867	15.5	15.5	15.5
Total Facility Sound Level (1-hour Leq):			**44.2**	**44.2**	**44.2**		**46.9**	**46.9**	**46.9**		**38.6**	**38.6**	**38.6**		**38.9**	**38.9**	**38.9**

Cadna A ID	Source Description	1755 Whistle Bare Rd - West Facade POR6				1992 Roseville Rd - North Facade POR7				1998 Roseville Rd - North Facade POR8				2020 Roseville Rd - North Facade POR9			
		Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am	Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am	Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am	Distance (m)	Partial Sound Levels[1] (dBA) Day 7am–7pm	Evening 7pm–11pm	Night 11pm–7am
Steady State Noise Impact																	
03_S1	Loader/Excavator	1016	28.6	28.6	28.6	558	33.7	33.7	33.7	501	39.7	39.7	39.7	488	38.6	38.6	38.6
03_S2	Crusher	982	36.3	36.3	36.3	557	44.6	44.6	44.6	506	47.2	47.2	47.2	499	45.8	45.8	45.8
03_S3	Stockpiling Conveyor Belt	971	29.9	29.9	29.9	567	34.4	34.4	34.4	517	36.1	36.1	36.1	513	35.5	35.5	35.5
03_T1	Truck Route	913	24.2	24.2	24.2	716	25.6	25.6	25.6	586	28.9	28.9	28.9	577	26.6	26.6	26.6
03_T2	Loader Route	1005	16.0	16.0	16.0	560	18.4	18.4	18.4	504	22.6	22.6	22.6	493	19.4	19.4	19.4
Total Facility Sound Level (1-hour Leq):			**38.0**	**38.0**	**38.0**		**45.4**	**45.4**	**45.4**		**48.2**	**48.2**	**48.2**		**46.9**	**46.9**	**46.9**

Note:

[1] Sound level at the receptor was calculated using Cadna A acoustical modelling software.

Table 3

Acoustic Assessment Summary
GSP Group Inc.
Tullis-Whistle Bare Aggregate Pit Expansion, Ayr, Ontario

Point of Reception ID	Point of Reception Description	Time of Day	Scenario1 Sound Levels (L_{EQ}) (dBA)	Scenario2 Sound Levels (L_{EQ}) (dBA)	Scenario3 Sound Levels (L_{EQ}) (dBA)	Performance Limit[1] (L_{EQ}) (dBA)	Compliance with Performance Limit (Yes/No)	Class Number	Verified by Acoustic Audit
Steady State Noise Impact									
POR1	2028 Whistle Bare Rd - South Facade	07:00–19:00	44	40	47	50	Yes	Class 2	No
POR10	Campground Southeast Limits	07:00–19:00	50	44	49	50	Yes	Class 2	No
POR11	Campground Southwest Limits	07:00–19:00	49	40	43	50	Yes	Class 2	No
POR2	1912 Whistle Bare Rd - South Facade	07:00–19:00	47	42	44	50	Yes	Class 2	No
POR3	1898 Whistle Bare Rd - South Facade	07:00–19:00	50	40	44	50	Yes	Class 2	No
POR4	1820 Whistle Bare Rd - West Facade	07:00–19:00	48	38	47	50	Yes	Class 2	No
POR5a	1775 Whistle Bare Rd - West Facade	07:00–19:00	37	49	39	50	Yes	Class 2	No
POR5b	1775 Whistle Bare Rd - Backyard POR	07:00–19:00	38	50	39	50	Yes	Class 2	No
POR6	1755 Whistle Bare Rd - West Facade	07:00–19:00	40	46	38	50	Yes	Class 2	No
POR7	1992 Roseville Rd - North Facade	07:00–19:00	38	39	45	50	Yes	Class 2	No
POR8	1998 Roseville Rd - North Facade	07:00–19:00	43	43	48	50	Yes	Class 2	No
POR9	2020 Roseville Rd - North Facade	07:00–19:00	38	37	47	50	Yes	Class 2	No

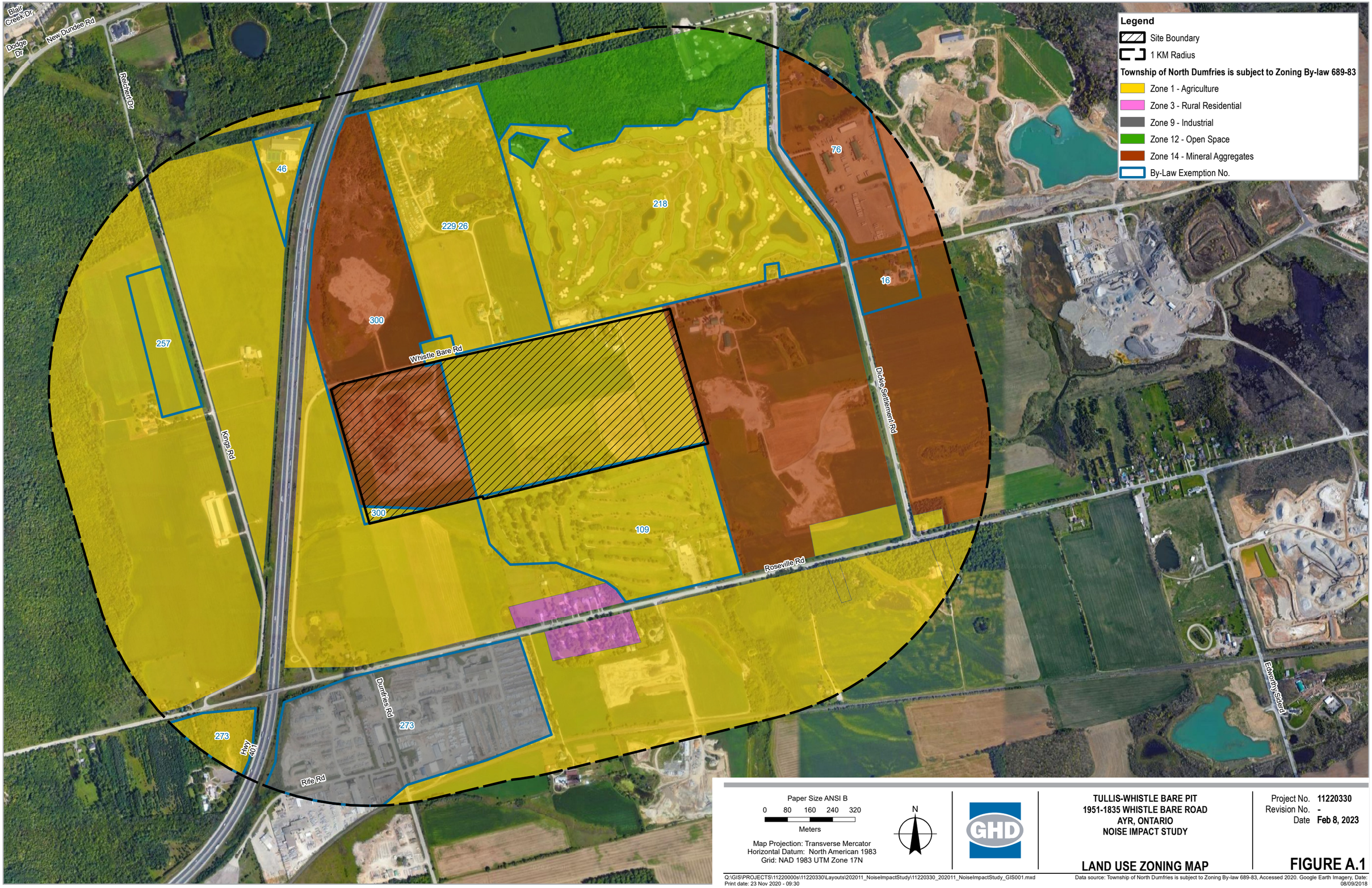
Note:

[1] Minimum MECP sound level limits as defined in NPC-300.

Appendices

Appendix A

Zoning Map/ D 6 Setbacks



Paper Size ANSI B

0 80 160 240 320

Meters

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 1983 UTM Zone 17N

N

GHD

TULLIS-WHISTLE BARE PIT
1951-1835 WHISTLE BARE ROAD
AYR, ONTARIO
NOISE IMPACT STUDY

Project No. **11220330**
Revision No. **-**
Date **Feb 8, 2023**

LAND USE ZONING MAP

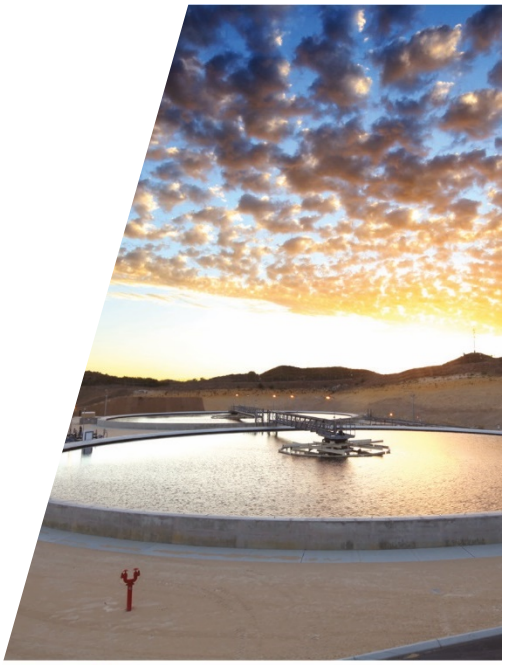
FIGURE A.1

Q:\GIS\PROJECTS\11220000s\11220330\Layouts\202011_NoiseImpactStudy\11220330_202011_NoiseImpactStudy_GIS001.mxd
Print date: 23 Nov 2020 - 09:30

Data source: Township of North Dumfries is subject to Zoning By-law 689-83, Accessed 2020. Google Earth Imagery, Date: 08/09/2018

Appendix B

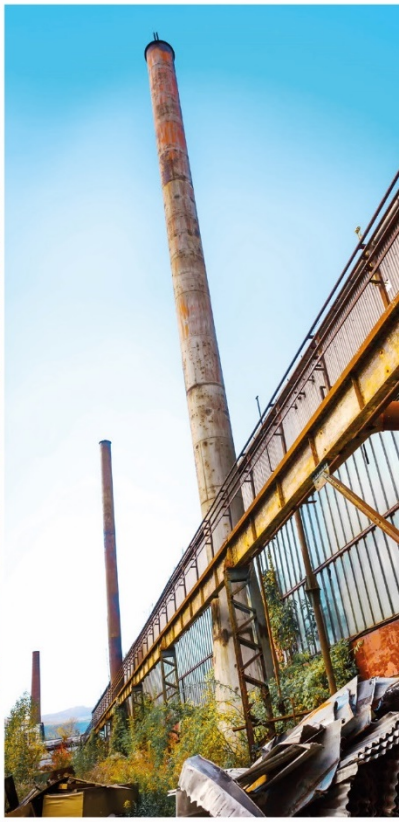
Best Management Practices Plan for Control of Fugitive Dust Emissions



Best Management Practices Plan for Control of Fugitive Dust Emissions

1476545 Ontario Inc.
Tullis-Whistle Bare Aggregate Pit
1821-1835 Whistle Bare Road
Ayr, Ontario

Revision 0



Foreword

This Dust Best Management Practices Plan (BMPP) documents the practices that will be in place to control potential fugitive dust from the expanded Tullis-Whistle Bare aggregate pit operating at 1821-1835 Whistle Bare Road in Ayr, Ontario (Facility or Site) and has been prepared in accordance with the requirements of the Ontario Ministry of the Environment, Conservation and Parks (MECP) Technical Bulletin "Management Approaches for Industrial Fugitive Dust Sources", published in February 2017.

As operations change and new fugitive dust sources are added to the Facility, this Plan will be updated as required. In order to maintain version control all pages in the Dust BMPP have been dated and documented with a version number. This Plan is Revision 0. The version number will change if the entire report is re-issued; if individual pages are provided to update small portions of the Plan then they will be issued with a X sub-revision number and the updated pages will be listed on the following Revision Control Page.

Version Control

Version	Date	Description of Changes	Updated Pages	Reviewed By
0	February 2021	Original	NA	Matthew Griffin, GHD Limited

Table of Contents

Figure Index

Table Index

Appendix Index

1. Introduction

This document entitled "Best Management Practices Plan for Control of Fugitive Dust Emissions" (Dust BMPP) has been prepared for Tullis-Whistle Bare (Tullis) Aggregate Pit located at 1821-1835 Whistle Bare Road in Ayr, Ontario (Facility or Site). The Facility location is presented on Figure 1. The Tullis Pit is planning an expansion, which will be licensed under the Aggregate Resources Act through the Ministry of Natural Resources and Forestry (MNRF).

The purpose of this Dust BMPP is to provide details about the best management practices that will be in place to control potential fugitive dust emissions, as well as planned strategies for dealing with potential fugitive dust issues, based on the dust conditions observed.

This Dust BMPP has been prepared in accordance with the requirements of the Ontario Ministry of the Environment, Conservation and Parks (MECP) Technical Bulletin "Management Approaches for Industrial Fugitive Dust Sources", published in February 2017.

This Dust BMPP includes the following information:

- Description of the operational activities at the Site.
- Identification of the main sources of fugitive dust emissions at the Site.
- Potential causes for high dust emissions and opacity resulting from these sources.
- Preventative and control measures in place or under development to minimize the likelihood of high dust emissions and opacity issues from the sources of fugitive dust emissions.
- Inspection and maintenance procedures and monitoring initiatives to ensure effective implementation of the preventative and control measures.
- Training requirements of Site personnel.
- Opportunities for continuous improvement of the Dust BMPP.

Upon commencement of expansion at the Site, 1476545 Ontario Inc. shall immediately implement the Dust BMPP for the control and mitigation of potential fugitive dust emissions resulting from the Site's operations. This Dust BMPP will be followed throughout the lifespan of the Site and will be revised based on "as-constructed" conditions or to circumvent dust issues. The Dust BMPP will be a "living" document.

2. Responsibilities

The following identifies the responsibilities held by each of the employment levels at the Site as they pertain to this Dust BMPP.

1476545 Ontario Inc. Management

The 1476545 Ontario Inc. Management Representatives, or designates, are responsible for:

- Reviewing the effectiveness of the current dust control measures at the Site on an ongoing basis.
- Ensuring the required resources are in place to execute the Dust BMPP.
- Scheduling and coordinating the implementation of fugitive dust control measures, as required.
- Maintaining documentation of schedules and daily logs.
- Ensuring the training of all applicable Site personnel and contractors on the plan and best management practices for the prevention of fugitive dust emissions.
- Completing Fugitive Dust Checklists, as necessary.

Applicable Site Personnel

All Site Personnel/Contractors who could be engaged in the associated work outlined in this Dust BMPP are responsible for:

- Reviewing the effectiveness of the current dust control measures at the Site on an on-going basis.
- Following the best available practices for dust control that are currently in place.

3. Process Description

1476545 Ontario Inc. owns the Tullis Pit and operates it as an agregate extraction pit. The area to be extracted covers an area of 41.1 hectares and it is expected that no more than 200,000 tonnes per year of aggregate will be removed from the pit. The operations at the Site will consist of mobile equipment used to extract, process, and transport the aggregate. The mobile equipment on-Site will include, but not be limited to; scrapers, bull dozers, excavators, front-end loaders, dump trucks, crushers, conveyor belts, and other portable processing equipment for material extraction.

There are two primary areas on-Site where the majority of the operations will occur: the processing area and the wash plant area. The processing area will consist of the primary extraction processing in addition to some dry screening operations. There will be a few stockpiles associated with the screened materials in the processing area. The wash plant area will further screen the aggregate material into different stockpiles. The material will be sent through a sprayer prior to screening and will be transported using open conveyor belts. All processing operations will occur at the lowest pit floor elevation, with the exception of the screening operations. The screening operations will still occur well below the upper level of the pit.The crushing operations may be contracted and completed at an alternate location.

The only pit entrance/exit will be accessed through the existing pit located at 1951 Whistle Bare Road. The weigh scale and scale house facilities will be located near the entrance/exit. Earthen berms will be located at key points along the property boundary. These berms will be 3 meters in

height and will be vegetated with a perennial legume/grass to control erosion and prevent dust generation.

Table 1 below presents general information about the Facility relevant to this Plan.

Table 1 Facility Description

Facility:	Tullis-Whistle Bare Aggregate Pit
Location:	1821-1835 Whistle Bare Road, Ayr, Ontario
Main activities/equipment used:	Aggregate Pit
Area occupied:	41.1 hectares
Production:	Up to 200,000 tonnes of aggregate per year
Nearest sensitive receptors:	Residences on Wistlebare Road, located just beyond the north eastern property boundary of the Site

A Site location map is presented on Figure 1. A Site operational plan is presented on Figure 2, which shows the buildings, property line, and berm locations. Figure 2 also summarizes key best management practices that will be applied to limit fugitive dust generation.

4. Fugitive Dust BMPP Methodology

This fugitive Dust BMPP has been developed by following the Plan Do Check and Act (PDCA) cycle according to ISO guideline as follows:

- **PLAN** - identifies and characterizes the emission sources and BMPs at the Site
- **DO** - documents the schedule for implementation of the proposed improvements
- **CHECK** - describes the monitoring procedures and a recordkeeping system
- **ACT** – describes, when necessary, the BMPP review and update procedures in order to promote its continuous improvement

5. Identification and Classification of Fugitive Dust Emission Sources

Fugitive dust emissions occur due to mechanical disturbances of granular materials exposed to the air. Dust generated from these open sources is termed "fugitive" because it is not discharged to the atmosphere in a confined flow stream, such as in an exhaust pipe or stack.

The mechanical disturbance may be equipment movement, the wind, or both. Therefore, some fugitive dust emissions occur and/or are intensified by equipment use, while others, i.e., wind erosion emissions, are independent of equipment use.

The main factors affecting the amount of fugitive dust emitted from a source include characteristics of the granular material being disturbed (i.e., particulate size distribution, density, and moisture) and intensity and frequency of the mechanical disturbance (i.e., wind conditions and/or equipment use

conditions). Precipitation and evaporation conditions can affect the moisture of the granular material being disturbed and, therefore, have an indirect effect on the amount of fugitive dust emitted.

Once dust is emitted, its travelling distance from the source is affected by various parameters. Namely climatic conditions; specifically wind speed, wind direction and precipitation, and particle size distribution. Higher wind speeds increase the distance travelled while precipitation can accelerate its deposition. Finer particulates can travel longer before settling and, therefore are of more concern.

The potential sources of fugitive dust emissions that have been identified for the Site include the following:

- On-Site traffic
- Processing operations
- Material conveyance systems
- Material stockpiles
- Material loading/unloading

5.1 On-Site Traffic/Roads

The Site will receive a large number of trucks on a daily basis which will load and transport out the aggregate material. Therefore, on-Site traffic is expected to be a potential source of fugitive dust emissions. Within the property there will be only unpaved roads.

Unpaved Roads/Areas

Unpaved roads have a much greater potential to release fugitive dust emissions than paved roads. These gravel roads release dust emissions as the accumulation of dust on the road surface is disturbed by vehicular traffic. Vehicle speed, vehicle weight, moisture content, and silt content are all critical factors in the amount of fugitive dust emitted from the roads. Should a significant amount of dust be generated on the roads, water suppressant will be applied to reduce fugitive dust release. A water truck will be used to apply water to the road surface on a daily basis and as needed thereafter based on weather conditions.

5.2 Processing Operations

At the Site, processing operations will occur at the processing area, the wash plant area, and the recycling area. Each of these areas will involve some form of screening or crushing operations which are expected to be potential sources of fugitive dust emissions. These operations will be subcontracted and some of the operations may be completed at an alternate location. The crusher will be equipped with a spray bar to minimize the potential for fugitive dust emissions from the crushing operations. Furthermore, with the exception of the screening operations, all processing operations will occur at the lowest pit floor elevation, which will reduce the potential for dust emissions from these activities. The screening operations will occur well below the upper level of the pit.

5.3 Material Conveyance Systems

The excavated aggregate will be sent through screening equipment to filter out the various material grades. Conveyance systems will be in place to transfer the material within the Site. The transportation of the material though this process is a potential source of fugitive dust emissions. The conveyance system used at the main processing area will handle dry material and the conveyance system used at the wash plant will handle wet material. The converyance of the wet material is not expected to be a source of fugitive dust.

5.4 Material Stockpiles

On-Site will be several outdoor stockpiles of various aggregate products of different types and sizes reflecting the range of product demand, and each will be active in terms of being continuously drawn from and replenished as demand warrants. These stockpiles will potentially be a source of fugitive dust emissions from wind erosion. Under normal operating conditions, these piles are not expected to be a significant source of fugitive dust emissions. However, extremely dry and windy conditions could pose a concern. Therefore, the weather will be actively monitored and water suppressant will be applied to the piles, if needed.

5.5 Material Loading/Unloading

Material loading and unloading will occur at various stages of the process operations occurring on-Site. Each loading and unloading event represents a potential source of fugitive dust emissions.

Material loading occurs anytime a piece of equipment (like a front end loader) is being used to pick up material. To minimize potential emissions, material loading should be carefully completed at a reduced speed to limit disturbance.

Material unloading occurs anytime material is dropped from one height to another. Examples of this would include material being dropped into a dump truck and material being dropped from a conveyance system to a stockpile. To minimize potential emissions, the drop distance of materials should be minimized.

5.6 Summary

Table 2 below summarizes each potential source of fugitive dust emissions and the potential cause for increased emissions.

Table 2 Sources of Fugitive Dust Emissions within the Site and Potential Causes for High Emissions

Source Description	Potential Causes for High Emissions and Opacity from Each Source
Unpaved roads	Increased vehicle traffic frequency Increased vehicle speed and weight Dry conditions High wind speed

Source Description	Potential Causes for High Emissions and Opacity from Each Source
Processing areas	Increased processing activities Increased elevation of processing activities Dry conditions High wind speed
Material conveyance systems	Increased processing activities Increased speed of conveyance systems Increased elevation of processing activities Dry conditions High wind speed
Material stockpiles	Increased stockpile size Increased elevation of stockpiles Fine materials included in the stockpiles Dry conditions High wind speed
Material loading/unloading	Larger drop distance during loading/unloading Increased frequency of operations Fine materials included in the loaded/unloaded material Dry conditions High wind speed

6. Control Measures

Control measures to reduce fugitive dust emissions should take into account the source of the dust emissions, the dispersion conditions, and the location of sensitive areas in order to avoid relevant impacts of dust emissions on receptors.

Control measures are implemented to reduce the generation and/or dispersion of fugitive dust emissions. These control measures can be classified as follows:

- **Preventative Procedure**: Measures pertaining to the design and installation of structures and the operating procedures which are implemented on a regular basis in order to prevent the generation of dust and/or the dispersion of dust emitted reaching sensitive areas.
- **Reactive Control Measures**: Measures which are implemented in the event of unexpected circumstances which can lead to the generation of dust and/or the dispersion of dust emitted reaching sensitive areas.

Table 3 presents a list of preventative procedures and control measures that will be used to mitigate fugitive dust emissions that are associated with the Site's operations. Key dust management practices are highlighted on Figure 2.

Table 3 Description of Preventative Procedures and Control Measures for Potential Fugitive Dust Emissions at the Site

Preventative Procedure/Control Measure	Description	Frequency
Applying water suppressant	Water suppressant will be sprayed on the roads. Applying water to the road surfaces will reduce the potential for dust to be picked up by winds.	Water will be applied to the roads on a daily basis based on climatic conditions (e.g., windy dry day vs. a precipitation day).
Spray bar	The crushing equipment will be equipped with spray bars. Applying water suppressant to the crushed material will reduce the potential for dust to be picked up by winds.	The watering rate will be set, as needed, to suppress visible dust based on climatic conditions (e.g., windy dry day vs. a precipitation day).
Optimized truck routes	The truck routes will be optimized for each transport activity occurring on Site to minimize the distances travelled. The optimized truck routes for on-Site traffic provide the most appropriate traffic flow for the activities occurring at the Site. This is an effective best management practice as it reduces the amount of dust kick up by minimizing trip distance.	The truck route optimization will be subject to change as the Site develops.
Maximum speed limit	A maximum speed limit of 20 kilometres per hour will be required throughout the Site to minimize emissions of fugitive dust from vehicular traffic.	This speed limit will be required for all vehicles travelling on-Site at all times.
Maintaining the stockpile sizes, appropriate drop heights, and material type	The size of each stockpile is to be maintained relatively consistent. The piles are to be kept as intended and not have any fines added. Materials are dropped onto the stockpiles by loader, conveyor, or truck. Efforts will be made to minimize the drop height wherever possible.	Stockpile size, location, material type, and material drop heights to be monitored and maintained daily.
Berms	The Site will have various earthen berms around the property line based on the phase of the operational plan.	Berms will be constructed prior to operational activities begin on-Site. Maintenance of the berms and pit slopes on-Site will be carried out throughout the life of the pit.
Vegetation	A schedule of vegetation planting has been defined by 1476545 Ontario Inc. Prior to each phase of excavation, 1476545 Ontario Inc. will ensure the designated vegetation will be in place. This vegetation will help prevent fugitive dust from escaping the Site.	Vegetation will be planted prior to the operational activities of each project phase begin.

The highest risk source of fugitive dust emissions is considered to be vehicle traffic on unpaved roadways. Therefore, applying water suppressant to the roads is considered to be the highest priority with respect to fugitive dust mitigation.

7. Meteorological Data

As the Site will process aggregate material in an outdoor environment, there is the potential for wind to pick up and transport fine dust particles. Therefore, it is important to have an understanding of the local meteorological conditions and how they might affect fugitive dust emissions.

Meteorological data was acquired from the MECP Regional Meteorological and Terrain Data for Air Dispersion Modelling database for the Site. Based on the location of the Site, crops data was used.

The data was converted into a wind rose plot (WRPLOT) supported file format (USEPA SAMSON format). Wind roses and wind speed frequencies were then generated using WRPLOT to assess the local wind speeds and wind directions. The wind rose plot is presented on Figure 3 and the wind class frequency distribution is presented on Figure 4.

The wind rose plot demonstrates that the predominant wind directions are blowing from the east (and southeast and northeast) and that approximately 62.4 percent of the winds have a speed of 4.5 metres per second (m/s) or less.

A review of the area has identified that there are a few residences located along Whistle Bare Road to the North of the property in addition to residences located to the South along Roseville Road. The planned control measures will effectively minimize the impact that residences along Whistle Bare Road and Roseville Road may encounter from south western winds.

8. Inspection, Maintenance and Documentation

The presence of visible dust will be monitored continuously and control measures will be implemented on an as-needed basis. In addition, daily process inspections by all operation and maintenance staff will be conducted at the Site to monitor the effectiveness of dust control practices. The housekeeping practices will be reviewed as part of these daily inspections, and further practices required, if any, are identified at that time. As part of the daily process inspections, the weather conditions will be reviewed and the temperature and windspeed will be documented in the daily logs. If the temperature is greater than 20 degrees Celsius (°C) and wind speeds are in excess of 5 m/s, process inspections will occur twice per day.

The dust management and inspection responsibility falls on the technical Operations Manager at the Site. On a bi-weekly basis, the Operations Manager or alternate will conduct a full Site walkthrough, including perimeter inspections to identify any potential areas of concern related to the generation of fugitive dust. Additionally, all applicable Site personnel will be directed to be cognizant of any potential fugitive dust emissions from the Site operations and will be instructed to communicate potential issues to the Operations Manager immediately upon detection.

The bi-weekly inspection will include special attention to the following areas:

- Unpaved roads/areas
- Outdoor stockpiles (wind erosion and drop operations)
- Material loading/unloading areas
- Property boundary berms

Daily observations will be logged and filed as per standard Site procedures. Bi-weekly fugitive dust checks will be completed in a similar fashion to the example checklist provided in Appendix A. Based upon the findings, equipment maintenance is completed and housekeeping practices are reviewed and modified, as appropriate.

The documentation requirements for this fugitive dust BMPP includes 1476545 Ontario Inc. recording, in a log book, each time a specific preventative and control measure described in the Dust BMPP is implemented. 1476545 Ontario Inc. shall record, at a minimum:

- The date when each emission control measure is installed, including a description of the control measure.
- The date when each new preventative measure or operating procedure to minimize emissions is implemented, including a description of the preventative measure or operating procedure.
- The date, time of commencement, and time of completion of each periodic activity conducted to minimize emissions, including a description of the preventative measure/procedure and the name of the individual performing the periodic activity.

9. Training

As part of maintaining best management practices for controlling and preventing fugitive dust emissions, an initial and ongoing training program will be provided for all applicable staff.

The training will address the existing control techniques in place for managing fugitive dust emissions and how to maintain them; how to conduct a fugitive dust observation check and complete the associated paperwork; what to do in the case of an unexpected fugitive dust release; and, who to notify of any concerns or problems pertaining to fugitive dust emissions. Refresher training will be provided, as necessary, based on changes to the fugitive dust emission control techniques or process operations.

1476545 Ontario Inc. will ensure that all new hires, including 1476545 Ontario Inc. personnel and contractors that will be engaged in the associated work listed in this Dust BMPP will be familiar with this Dust BMPP.

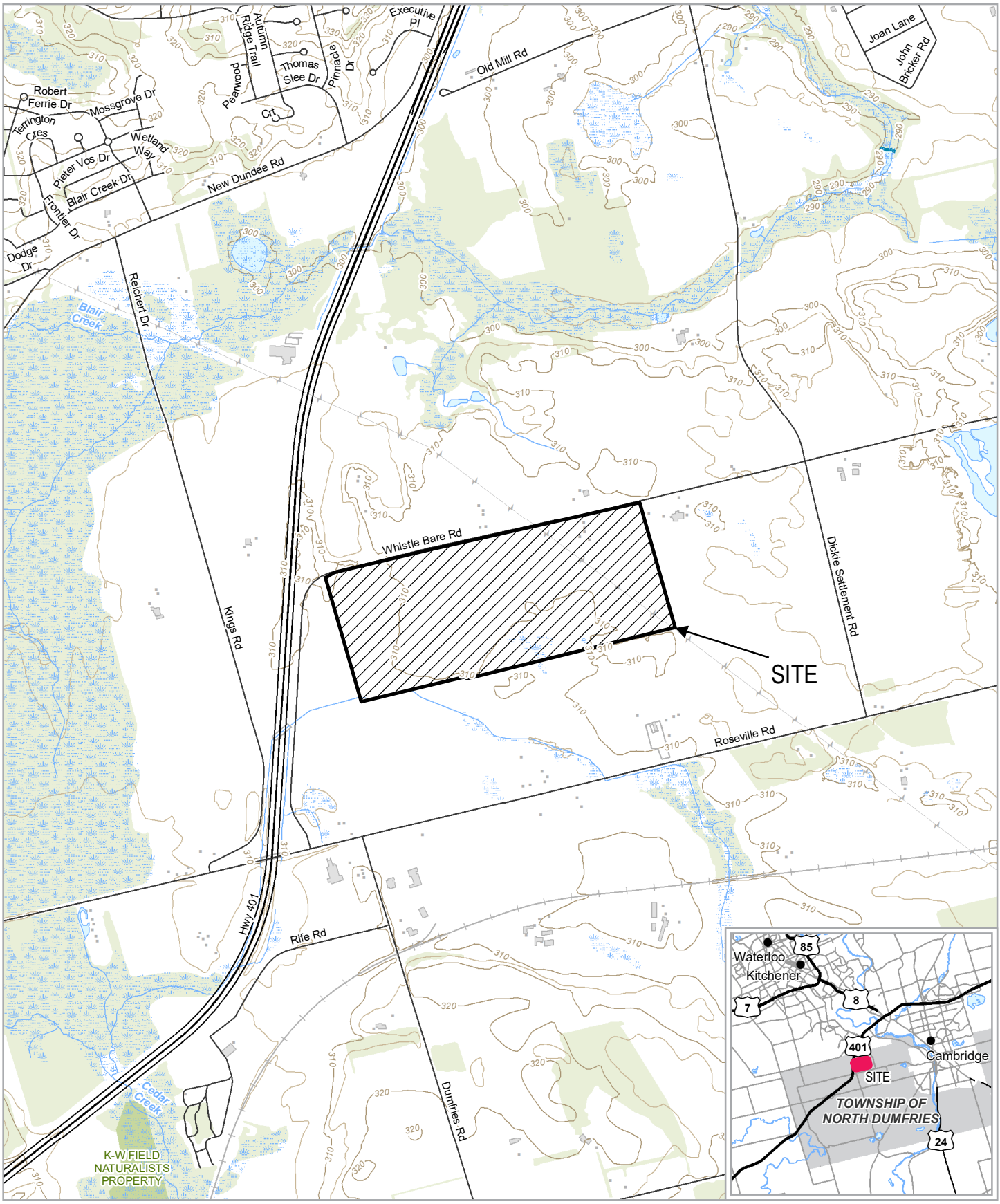
10. Dust BMPP Review and Continuous Improvement

Inspections and monitoring procedures will assist 1476545 Ontario Inc. personnel with the maintenance of an effective Dust BMPP. The Dust BMPP should be monitored and updated, as follows:

- If there are significant changes in the fugitive dust emissions sources (e.g. "as-constructed" site, etc.).
- If there are verified complaints associated with fugitive dust emissions from the Site.
- When there are visible dust emissions occurring more frequently and/or at a higher rate (excluding seasonal conditions).

Review of the Dust BMPP is intended to evaluate the effectiveness of the dust control practices and focus on the identification of improvement opportunities that can reduce the risk of complaints related to fugitive dust emissions. A review of the Dust BMPP will ensure it is remaining effective in controlling fugitive dust emissions.

As part of implementing a successful fugitive Dust BMPP, it is important to be aware of areas where fugitive dust emissions can be reduced further. The Site will endeavor to improve its capacity for controlling fugitive dust emissions by identifying areas for potential future improvements and implementing additional practices as appropriate.



Paper Size ANSI A

0 130 260 390 520

Meters

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 1983 UTM Zone 17N

N

TULLIS-WHISTLE BARE PIT
1951-1835 WHISTLE BARE ROAD
AYR, ONTARIO
BMPP FOR CONTROL OF FUGITIVE DUST EMISSIONS

Project No. **11220330**
Revision No. **-**
Date **Nov 19, 2020**

SITE LOCATION MAP

FIGURE 1

Q:\GIS\PROJECTS\11220000s\11220330\Layouts\202011_BMPP_ControlDust\11220330_202011_BMPP_ControlDust_GIS001.mxd
Print date: 19 Nov 2020 - 09:14

WHISTLE BARE ROAD

HYDRO EASEMENT

LEGEND

- PROPERTY BOUNDARY
- EXISTING STRUCTURE
- EXISTING TREE LINE
- EXISTING GRAVEL ROAD
- HYDRO TOWER
- LIMIT OF WETLAND DRAINAGE AREA
- LIMIT OF EXCAVATION
- PROPOSED TREE LINE
- PROPOSED BERM

0 25 50 75m

N

GHD

TULLIS-WHISTLE BARE PIT
1951-1835 WHISTLE BARE ROAD, AYR, ON

BMPP FOR CONTROL OF FUGITIVE DUST EMISSIONS

Project No. **11220330**
Date **November 2020**

FIGURE 2

Data Source

Filename: N:\CA\Waterloo\Projects\662\11220330\Digital_Design\ACAD 2020\Figures\RPT001\11220330(RPT001)GN-WA001.dwg
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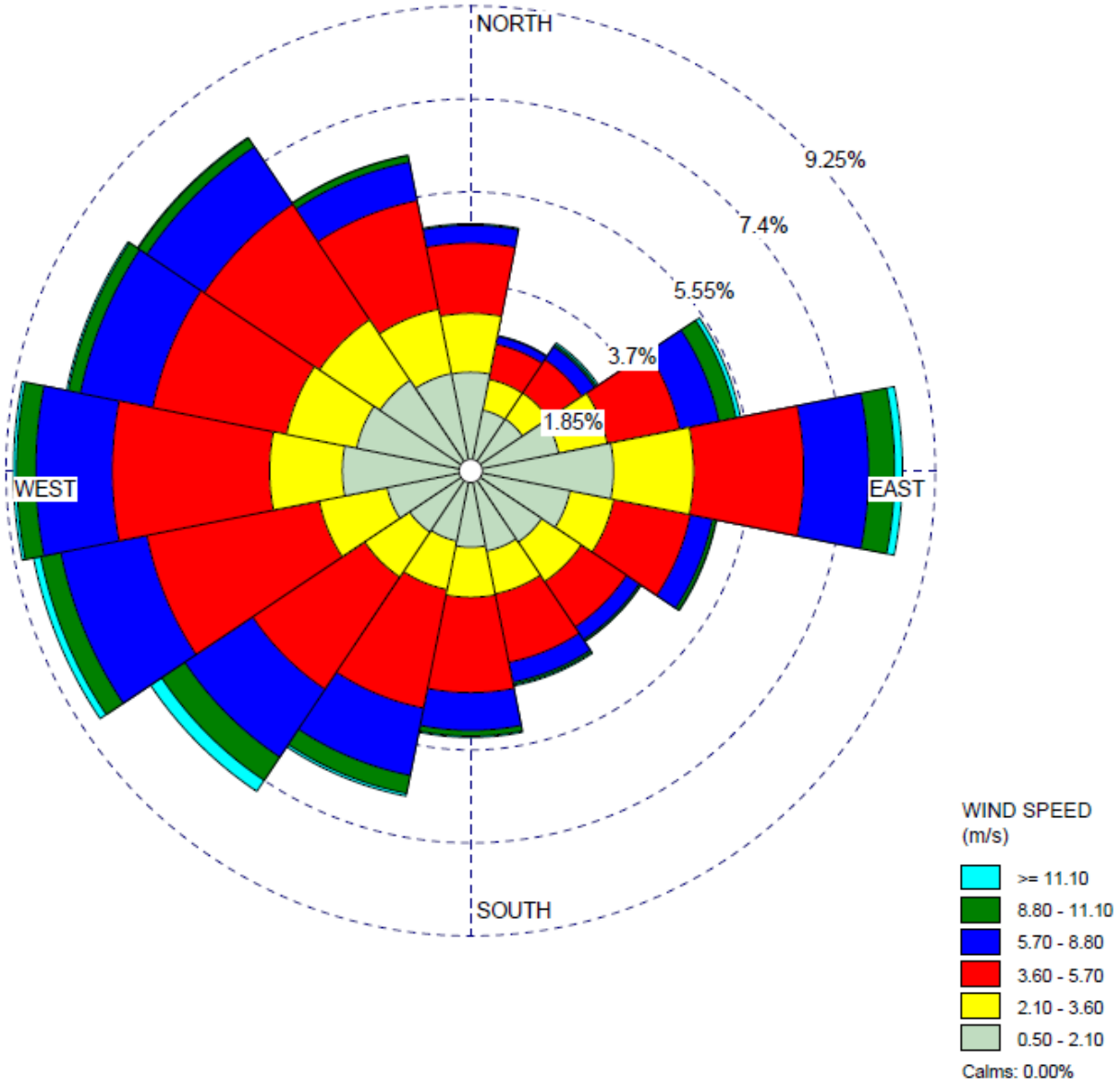
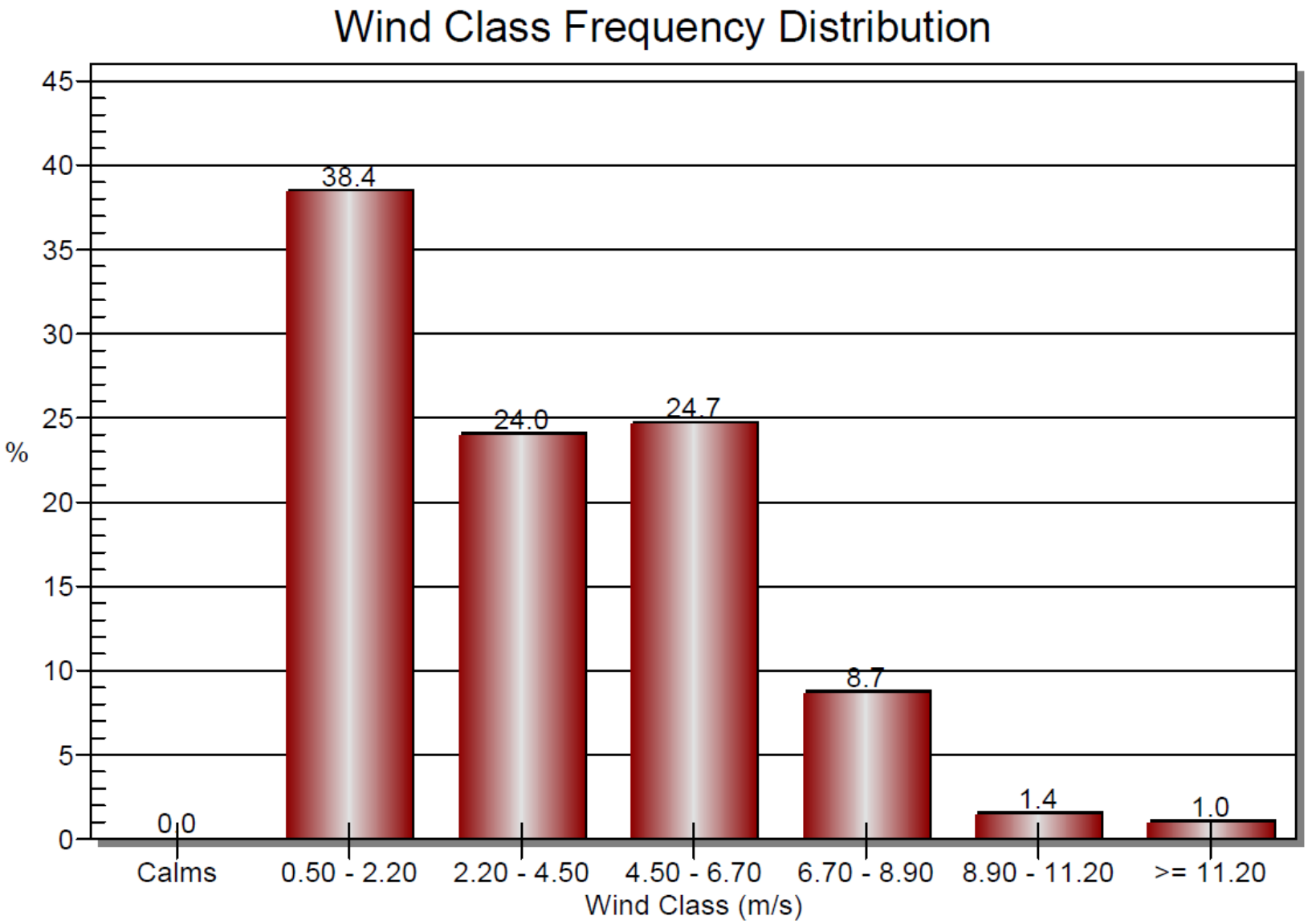


TULLIS-WHISTLE BARE PIT
1821-1835 WHISTLE BARE ROAD, AYR, ONTARIO
BMPP FOR CONTROL OF
FUGITIVE DUST EMISSIONS

CENTRAL REGION CROPS
WIND ROSE 2014-2018

Project No. 112**20330**
Date **November 2020**

FIGURE 3



TULLIS-WHISTLE BARE PIT
1821-1835 WHISTLE BARE ROAD, AYR, ONTARIO
BMPP FOR CONTROL OF
FUGITIVE DUST EMISSIONS

CENTRAL REGION CROPS WIND CLASS
FREQUENCY DISTRIBUTION GRAPH

Project No. 11220330-01
Date **November 2020**

FIGURE 4

Appendix A
Fugitive Dust Checklist

Fugitive Dust BMPP Inspection Checklist
1476545 Ontario Inc.
Tullis-Whistle Bare Aggregate Pit

Completed by: _____

Date: _____

Weather Conditions: Precipitation? Yes ☐ No ☐ Rain ☐ Snow ☐ Wind Speed: Calm ☐ Moderate ☐ High ☐ Wind Direction (blowing from): _____

SOURCE	INSPECTION POINTS	YES	NO	NOTES
Unpaved Roads	Are dust emissions observed to be under control?	☐	☐	
	Is water spraying required?	☐	☐	
	Are vehicles obeying the posted speed limit?	☐	☐	
Storage Piles	Are dust emissions observed to be under control?	☐	☐	
	Is water spraying required?	☐	☐	
Transfer Locations	Are dust emissions observed to be under control?	☐	☐	
	Are drivers required to unload at a lower height?	☐	☐	
Berms	Are dust emissions observed to be under control?	☐	☐	
	Are berms in good condition?	☐	☐	

Additional Comments / Corrective Action:

_____
_____
_____
_____

about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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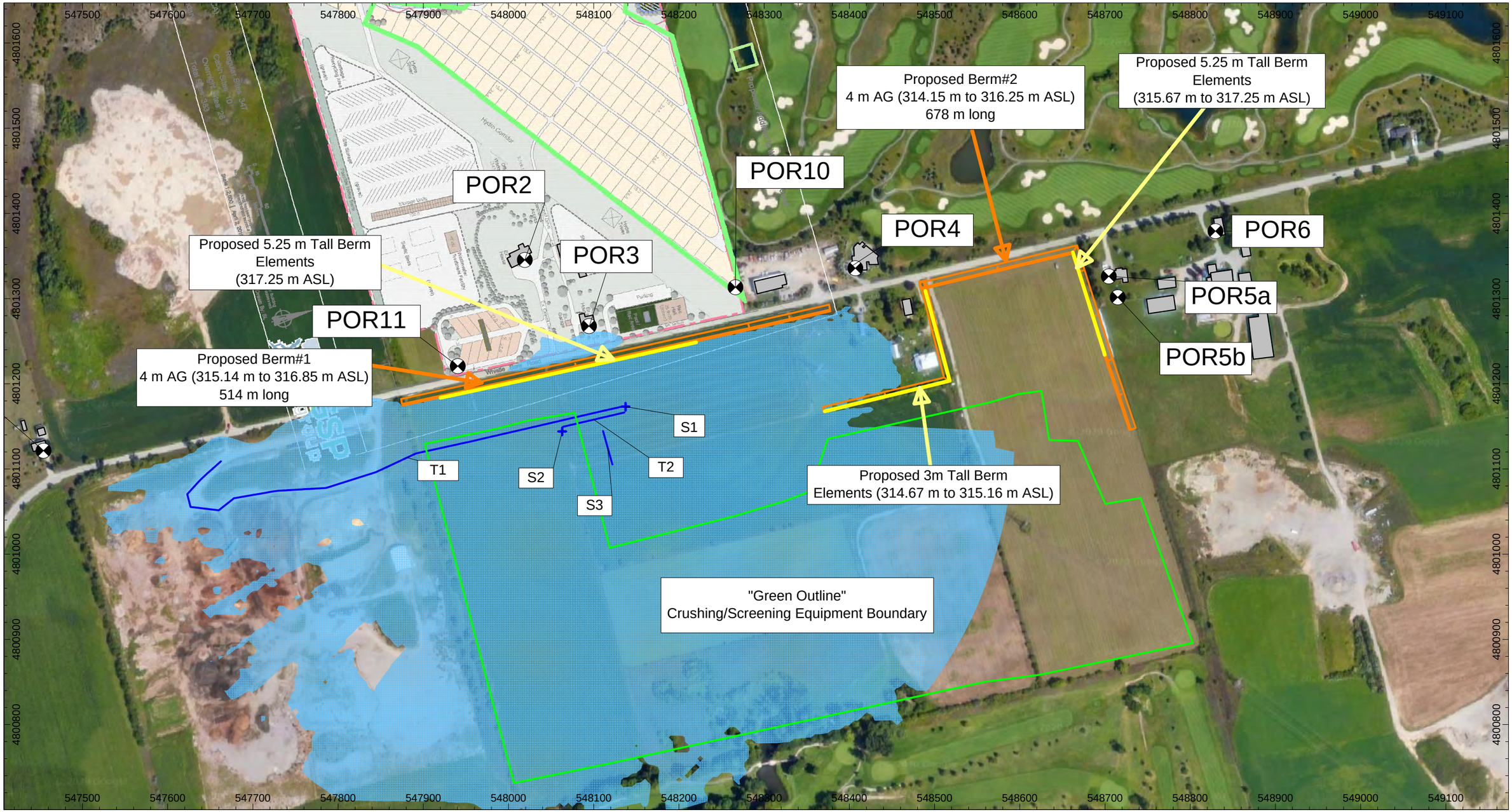
Appendix C

Off Site Stationary Noise Modelling Sound Levels and Results



Source: Google Satellite

N

Legend

>= 50 dBA

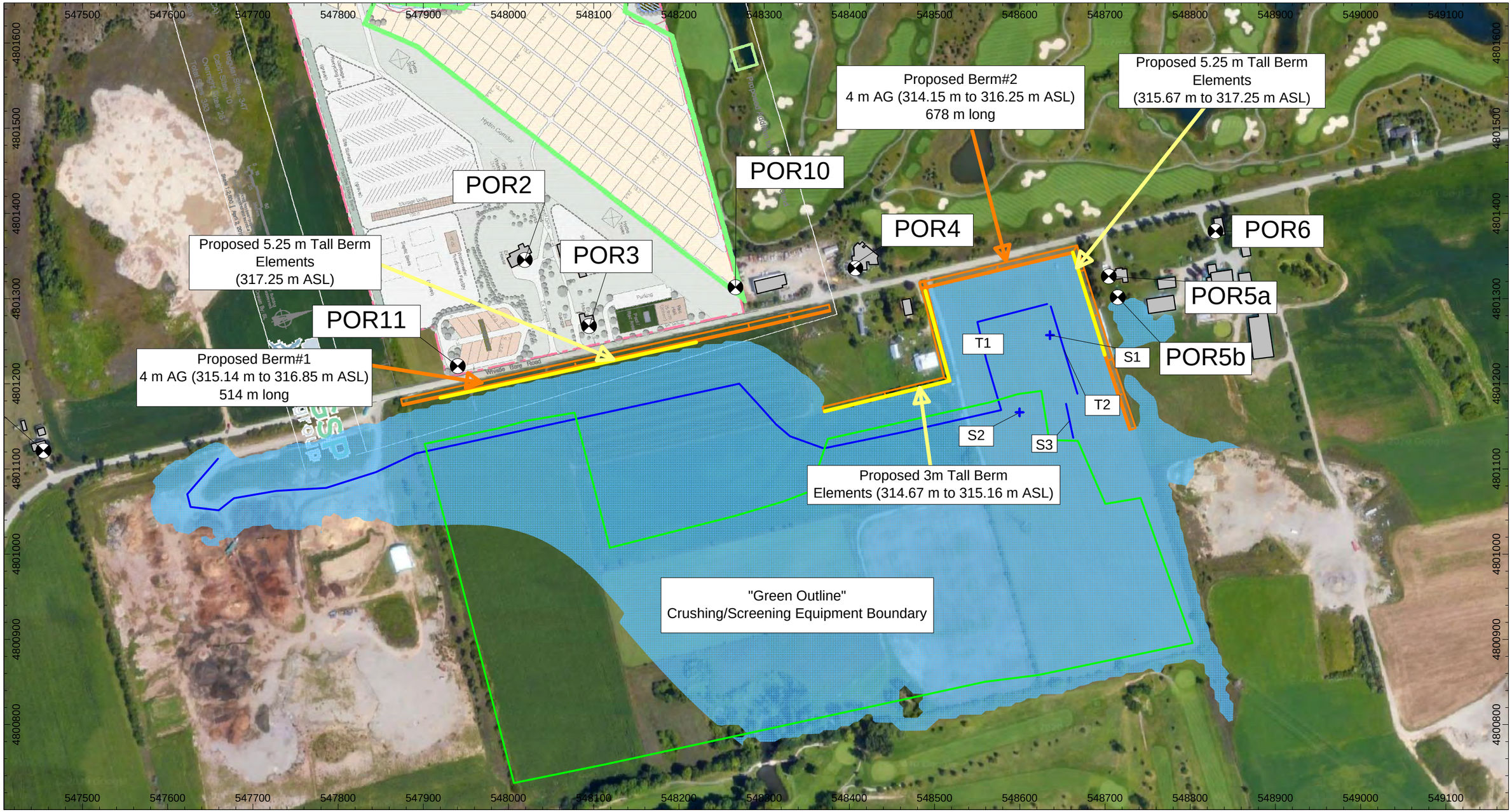
LAND USE COMPATIBILITY STUDY UPDATE
GSP GROUP INC.
TULLIS WHISTLE BARE AGGREGATE PIT EXPANSION

11220330
14.02.2023

SCENARIO 1 - NOISE CONTOUR PLOT (Steady State Mitigated, Day, 1.5 m A.G.)

FIGURE C.1

CadnaA File: \\ghdnet\ghd\CA\Waterloo\Projects\662\11220330\Land Use Compatability Study\Noise Impact Study\Cadna Model\WhistleBare- AD EDITS 2023.cna



Source: Google Satellite

N

Legend

>= 50 dBA

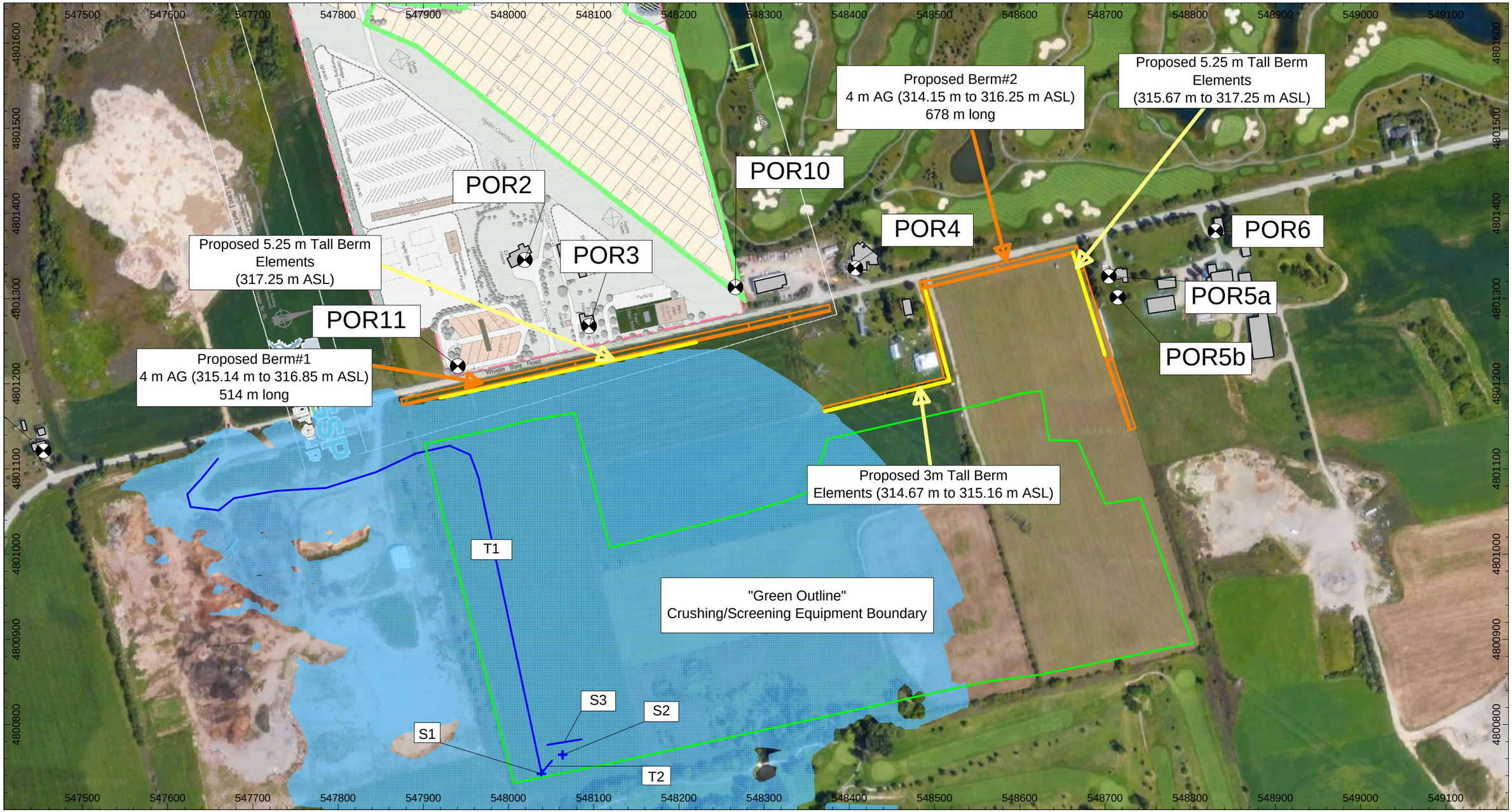
LAND USE COMPATIBILITY STUDY UPDATE
GSP GROUP INC.
TULLIS WHISTLE BARE AGGREGATE PIT EXPANSION

11220330
14.02.2023

SCENARIO 2 -NOISE CONTOUR PLOT (Steady State Mitigated, Day, 1.5 m A.G.)

FIGURE C.2

CadnaA File: \\ghdnet\ghd\CA\Waterloo\Projects\662\11220330\Land Use Compatability Study\Noise Impact Study\Cadna Model\WhistleBare- AD EDITS 2023.cna



Source: Google Satellite

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Legend

>= 50 dBA

LAND USE COMPATIBILITY STUDY UPDATE
GSP GROUP INC.
TULLIS WHISTLE BARE AGGREGATE PIT EXPANSION

11220330
14.02.2023

SCENARIO 3 - NOISE CONTOUR PLOT (Steady State Mitigated, Day, 1.5 m A.G.)

FIGURE C.3

CadnaA File: \\ghdnet\ghd\CA\Waterloo\Projects\662\11220330\Land Use Compatability Study\Noise Impact Study\Cadna Model\WhistleBare- AD EDITS 2023.cna

Table C.1

Noise Source Sound Level Summary
GSP Group Inc.
Tullis-Whistle Bare Aggregate Pit Expansion, Ayr, Ontario

Cadna A ID	Noise Source Description		1/1 Octave Band Data									Unadjusted Total Sound Power Level	Tonal Penalty Assessment		Height Absolute	Operating Time Day/Eve/Night	Vehicle Volumes Day/Eve/Night	Speed	Reference/Comments
			32	63	125	250	500	1000	2000	4000	8000	(dBA)		(dBA)	(m)	(min)	(veh/hr)	(km/hr)	
01_S1	Loader/Excavator	PWL (dB)	31.0	113.0	106.0	103.0	104.0	102.0	101.0	97.0	89.0	115.0							
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								
		PWL (dBA)	-8.4	86.8	89.9	94.4	100.8	102.0	102.2	98.0	87.9	**107.5**	No	0	307.5	60/60/60	—	—	GHD Reference Spectra
01_S2	Crusher	PWL (dB)	114.0	118.0	115.0	107.0	111.0	110.0	108.0	104.0	95.0	121.9							
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								
		PWL (dBA)	74.6	91.8	98.9	98.4	107.8	110.0	109.2	105.0	93.9	**114.7**	No	0	308.0	60/60/60	—	—	GHD Reference Spectra
01_S3	Stockpiling Conveyor Belt	PWL (dB)	—	71.0	69.0	68.0	71.0	75.0	67.0	63.0	57.0	79.0							Referenced from UK Department for Environment, Food and Rural Affairs (Defra)
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								Noise Database for Construction Noise document
		PWL (dBA)	—	44.8	52.9	59.4	67.8	75.0	68.2	64.0	55.9	**76.8**	No	0	307.0	—			Transport Truck Route - 26ton 235kw - DEFRA Table 1(c)#16
01_T1	Truck Route	PWL (dB)	31.0	117.0	112.0	105.0	107.0	104.0	103.0	100.0	91.0	119.0							Referenced from UK Department for Environment, Food and Rural Affairs (Defra)
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								Noise Database for Construction Noise document
		PWL (dBA)	—	90.8	95.9	96.4	103.8	104.0	104.2	101.0	89.9	**109.9**	No	0	306.0	—	4/4/4	15	Transport Truck Route - 26ton 235kw - DEFRA Table 1(c)#16
01_T2	Loader Route	PWL (dB)	—	77.0	83.0	91.0	75.0	75.0	72.0	65.0	59.0	92.0							Referenced from UK Department for Environment, Food and Rural Affairs (Defra)
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								Noise Database for Construction Noise document
		PWL (dBA)	—	50.8	66.9	82.4	71.8	75.0	73.2	66.0	57.9	**84.0**	No	0	307.0	—	6/6/6	15	Transport Truck Route - 26ton 235kw - DEFRA Table 1(c)#16
02_S1	Loader/Excavator	PWL (dB)	31.0	113.0	106.0	103.0	104.0	102.0	101.0	97.0	89.0	115.0							
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								
		PWL (dBA)	-8.4	86.8	89.9	94.4	100.8	102.0	102.2	98.0	87.9	**107.5**	No	0	307.7	60/60/60	—	—	GHD Reference Spectra
02_S2	Crusher	PWL (dB)	114.0	118.0	115.0	107.0	111.0	110.0	108.0	104.0	95.0	121.9							
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								
		PWL (dBA)	74.6	91.8	98.9	98.4	107.8	110.0	109.2	105.0	93.9	**114.7**	No	0	308.5	60/60/60	—	—	GHD Reference Spectra
02_S3	Stockpiling Conveyor Belt	PWL (dB)	—	71.0	69.0	68.0	71.0	75.0	67.0	63.0	57.0	79.0							Referenced from UK Department for Environment, Food and Rural Affairs (Defra)
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								Noise Database for Construction Noise document
		PWL (dBA)	—	44.8	52.9	59.4	67.8	75.0	68.2	64.0	55.9	**76.8**	No	0	308.3	—			Transport Truck Route - 26ton 235kw - DEFRA Table 1(c)#16
02_T1	Truck Route	PWL (dB)	31.0	117.0	112.0	105.0	107.0	104.0	103.0	100.0	91.0	119.0							Referenced from UK Department for Environment, Food and Rural Affairs (Defra)
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								Noise Database for Construction Noise document
		PWL (dBA)	—	90.8	95.9	96.4	103.8	104.0	104.2	101.0	89.9	**109.9**	No	0	306.9	—	4/4/4	15	Transport Truck Route - 26ton 235kw - DEFRA Table 1(c)#16
02_T2	Loader Route	PWL (dB)	—	77.0	83.0	91.0	75.0	75.0	72.0	65.0	59.0	92.0							Referenced from UK Department for Environment, Food and Rural Affairs (Defra)
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								Noise Database for Construction Noise document
		PWL (dBA)	—	50.8	66.9	82.4	71.8	75.0	73.2	66.0	57.9	**84.0**	No	0	307.0	—	6/6/6	15	Transport Truck Route - 26ton 235kw - DEFRA Table 1(c)#16
03_S1	Loader/Excavator	PWL (dB)	31.0	113.0	106.0	103.0	104.0	102.0	101.0	97.0	89.0	115.0							
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								
		PWL (dBA)	-8.4	86.8	89.9	94.4	100.8	102.0	102.2	98.0	87.9	**107.5**	No	0	309.0	60/60/60	—	—	GHD Reference Spectra
03_S2	Crusher	PWL (dB)	114.0	118.0	115.0	107.0	111.0	110.0	108.0	104.0	95.0	121.9							
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								
		PWL (dBA)	74.6	91.8	98.9	98.4	107.8	110.0	109.2	105.0	93.9	**114.7**	No	0	309.6	60/60/60	—	—	GHD Reference Spectra
03_S3	Stockpiling Conveyor Belt	PWL (dB)	—	71.0	69.0	68.0	71.0	75.0	67.0	63.0	57.0	79.0							Referenced from UK Department for Environment, Food and Rural Affairs (Defra)
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								Noise Database for Construction Noise document
		PWL (dBA)	—	44.8	52.9	59.4	67.8	75.0	68.2	64.0	55.9	**76.8**	No	0	307.8	—			Transport Truck Route - 26ton 235kw - DEFRA Table 1(c)#16
03_T1	Truck Route	PWL (dB)	31.0	117.0	112.0	105.0	107.0	104.0	103.0	100.0	91.0	119.0							Referenced from UK Department for Environment, Food and Rural Affairs (Defra)
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								Noise Database for Construction Noise document
		PWL (dBA)	—	90.8	95.9	96.4	103.8	104.0	104.2	101.0	89.9	**109.9**	No	0	307.3	—	4/4/4	15	Transport Truck Route - 26ton 235kw - DEFRA Table 1(c)#16
03_T2	Loader Route	PWL (dB)	—	77.0	83.0	91.0	75.0	75.0	72.0	65.0	59.0	92.0							Referenced from UK Department for Environment, Food and Rural Affairs (Defra)
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								Noise Database for Construction Noise document
		PWL (dBA)	—	50.8	66.9	82.4	71.8	75.0	73.2	66.0	57.9	**84.0**	No	0	308.3	—	6/6/6	15	Transport Truck Route - 26ton 235kw - DEFRA Table 1(c)#16

Appendix D

CadnaA Sample Calculation

Receiver
Name: 2028 Whistle Bare Rd - South Facade
ID: POR1
X: 547454.25 m
Y: 4801121.46 m
Z: 312.50 m

Point Source, ISO 9613, Name: "Crusher", ID: "!0100!01-S2"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
14	548063.02	4801144.06	308.00	0	DEN	A	114.7	0.0	0.0	0.0	0.0	66.7	3.1	-1.0	0.0	0.0	4.6	0.0	0.0	41.2

Line Source, ISO 9613, Name: "Stockpiling Conveyor Belt", ID: "!0100!01-S3"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
37	548116.39	4801124.98	307.00	0	DEN	A	91.7	16.1	0.0	0.0	0.0	67.4	2.8	-1.2	0.0	0.0	0.0	0.0	0.0	38.7

Point Source, ISO 9613, Name: "Loader/Excavator", ID: "!0100!01-S1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
52	548137.25	4801173.14	307.50	0	DEN	A	107.4	0.0	0.0	0.0	0.0	67.7	3.4	-0.8	0.0	0.0	4.5	0.0	0.0	32.5

Line Source, ISO 9613, Name: "Loader Route", ID: "!0100!01-T2"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
75	548100.13	4801157.97	307.00	0	DEN	A	81.0	18.7	0.0	0.0	0.0	67.2	1.3	2.1	0.0	0.0	2.5	0.0	0.0	26.6

Line Source, ISO 9613, Name: "Truck Route", ID: "!0100!01-T1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
100	547624.88	4801062.93	306.00	0	DEN	A	74.2	11.9	0.0	0.0	0.0	56.1	1.3	-0.3	0.0	0.0	4.5	0.0	0.0	24.5
111	547625.68	4801073.41	306.00	0	DEN	A	74.2	9.1	0.0	0.0	0.0	56.0	1.2	-0.2	0.0	0.0	4.5	0.0	0.0	21.8
122	547713.60	4801071.91	305.00	0	DEN	A	74.2	11.6	0.0	0.0	0.0	59.4	1.7	-0.4	0.0	0.0	4.8	0.0	0.0	20.3
126	547663.23	4801054.19	305.58	0	DEN	A	74.2	9.3	0.0	0.0	0.0	57.8	1.5	-0.4	0.0	0.0	0.0	0.0	0.0	24.7
133	547657.18	4801104.30	307.56	0	DEN	A	74.2	8.6	0.0	0.0	0.0	57.2	1.4	0.8	0.0	0.0	4.0	0.0	0.0	19.4
141	547633.44	4801054.68	306.00	0	DEN	A	74.2	7.1	0.0	0.0	0.0	56.6	1.3	-0.3	0.0	0.0	0.0	0.0	0.0	23.7
160	547870.09	4801108.28	305.72	0	DEN	A	74.2	13.6	0.0	0.0	0.0	63.4	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	22.6
178	547636.17	4801084.90	306.43	0	DEN	A	74.2	6.5	0.0	0.0	0.0	56.4	1.3	0.2	0.0	0.0	4.2	0.0	0.0	18.6
184	547628.86	4801055.23	306.00	0	DEN	A	74.2	6.1	0.0	0.0	0.0	56.4	1.3	-0.3	0.0	0.0	0.0	0.0	0.0	22.9
190	547651.78	4801052.50	306.00	0	DEN	A	74.2	6.4	0.0	0.0	0.0	57.4	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	22.1
201	547643.79	4801092.36	307.00	0	DEN	A	74.2	5.2	0.0	0.0	0.0	56.7	1.3	0.4	0.0	0.0	4.2	0.0	0.0	16.9
209	547629.36	4801077.44	306.00	0	DEN	A	74.2	4.4	0.0	0.0	0.0	56.1	1.3	-0.1	0.0	0.0	4.5	0.0	0.0	16.7
216	547647.92	4801096.04	307.00	0	DEN	A	74.2	4.8	0.0	0.0	0.0	56.8	1.3	0.5	0.0	0.0	4.1	0.0	0.0	16.2
291	547658.06	4801051.75	305.80	0	DEN	A	74.2	5.6	0.0	0.0	0.0	57.7	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	21.1
301	547638.55	4801087.51	306.69	0	DEN	A	74.2	4.1	0.0	0.0	0.0	56.5	1.3	0.2	0.0	0.0	4.2	0.0	0.0	16.1
312	547754.77	4801075.92	305.00	0	DEN	A	74.2	8.2	0.0	0.0	0.0	60.7	1.9	-0.5	0.0	0.0	4.6	0.0	0.0	15.8
358	547975.68	4801136.94	307.00	0	DEN	A	74.2	12.4	0.0	0.0	0.0	65.3	2.7	-0.5	0.0	0.0	4.5	0.0	0.0	14.5
371	547746.85	4801075.46	305.00	0	DEN	A	74.2	7.4	0.0	0.0	0.0	60.4	1.8	-0.5	0.0	0.0	4.7	0.0	0.0	15.2
398	548010.52	4801145.00	307.00	0	DEN	A	74.2	12.7	0.0	0.0	0.0	65.9	2.9	-0.5	0.0	0.0	4.5	0.0	0.0	14.1
410	547761.76	4801076.33	305.00	0	DEN	A	74.2	7.6	0.0	0.0	0.0	60.9	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	15.0
423	548028.64	4801149.19	307.00	0	DEN	A	74.2	12.7	0.0	0.0	0.0	66.2	2.9	-0.5	0.0	0.0	4.5	0.0	0.0	13.7
440	547644.71	4801053.34	306.00	0	DEN	A	74.2	3.6	0.0	0.0	0.0	57.1	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	19.6
459	547820.44	4801088.70	305.00	0	DEN	A	74.2	8.7	0.0	0.0	0.0	62.3	2.1	-0.6	0.0	0.0	4.5	0.0	0.0	14.5
486	547993.81	4801141.14	307.00	0	DEN	A	74.2	12.0	0.0	0.0	0.0	65.6	2.8	-0.5	0.0	0.0	4.5	0.0	0.0	13.7
503	547675.06	4801063.45	305.35	0	DEN	A	74.2	4.5	0.0	0.0	0.0	58.2	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	14.9
531	547639.90	4801053.91	306.00	0	DEN	A	74.2	3.2	0.0	0.0	0.0	56.9	1.3	-0.3	0.0	0.0	0.0	0.0	0.0	19.5
567	548047.82	4801153.62	307.00	0	DEN	A	74.2	12.7	0.0	0.0	0.0	66.5	3.0	-0.5	0.0	0.0	4.5	0.0	0.0	13.4
588	547884.92	4801115.20	306.41	0	DEN	A	74.2	9.8	0.0	0.0	0.0	63.7	2.4	-0.5	0.0	0.0	4.5	0.0	0.0	13.9
611	548066.25	4801157.88	307.00	0	DEN	A	74.2	12.7	0.0	0.0	0.0	66.8	3.1	-0.4	0.0	0.0	4.4	0.0	0.0	13.1
618	547668.58	4801058.38	305.41	0	DEN	A	74.2	3.8	0.0	0.0	0.0	58.0	1.5	-0.4	0.0	0.0	0.0	0.0	0.0	19.0
649	548084.42	4801162.08	307.00	0	DEN	A	74.2	12.7	0.0	0.0	0.0	67.0	3.1	-0.5	0.0	0.0	4.4	0.0	0.0	12.8
657	547640.02	4801089.00	306.90	0	DEN	A	74.2	2.1	0.0	0.0	0.0	56.5	1.3	0.3	0.0	0.0	4.2	0.0	0.0	14.0
682	547813.87	4801086.62	305.00	0	DEN	A	74.2	7.7	0.0	0.0	0.0	62.2	2.1	-0.6	0.0	0.0	4.5	0.0	0.0	13.6
698	548104.11	4801166.63	307.00	0	DEN	A	74.2	12.7	0.0	0.0	0.0	67.3	3.2	-0.4	0.0	0.0	4.4	0.0	0.0	12.5
712	548123.06	4801170.97	307.00	0	DEN	A	74.2	12.8	0.0	0.0	0.0	67.5	3.2	-0.4	0.0	0.0	4.4	0.0	0.0	12.2
732	547632.55	4801080.94	306.05	0	DEN	A	74.2	1.4	0.0	0.0	0.0	56.2	1.3	0.1	0.0	0.0	4.3	0.0	0.0	13.7
758	547957.82	4801132.82	307.00	0	DEN	A	74.2	10.1	0.0	0.0	0.0	65.0	2.7	-0.5	0.0	0.0	4.5	0.0	0.0	12.5
768	547641.53	4801090.34	307.00	0	DEN	A	74.2	1.5	0.0	0.0	0.0	56.6	1.3	0.3	0.0	0.0	4.2	0.0	0.0	13.3

Line Source, ISO 9613, Name: "Truck Route", ID: "!0100!01-T1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
771	547692.85	4801068.29	305.00	0	DEN	A	74.2	3.7	0.0	0.0	0.0	58.8	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	13.4
775	547637.20	4801054.24	306.00	0	DEN	A	74.2	1.6	0.0	0.0	0.0	56.8	1.3	-0.3	0.0	0.0	0.0	0.0	0.0	18.0
784	547661.97	4801108.57	308.00	0	DEN	A	74.2	1.7	0.0	0.0	0.0	57.4	1.4	0.9	0.0	0.0	3.9	0.0	0.0	12.3
793	547648.42	4801052.90	306.00	0	DEN	A	74.2	1.6	0.0	0.0	0.0	57.3	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	17.5
804	547731.86	4801074.58	305.00	0	DEN	A	74.2	4.2	0.0	0.0	0.0	60.0	1.8	-0.5	0.0	0.0	4.9	0.0	0.0	12.2
810	547642.73	4801053.58	306.00	0	DEN	A	74.2	1.1	0.0	0.0	0.0	57.0	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	17.2
817	547646.34	4801094.64	307.00	0	DEN	A	74.2	0.7	0.0	0.0	0.0	56.8	1.3	0.4	0.0	0.0	4.2	0.0	0.0	12.3
832	547797.86	4801081.54	305.00	0	DEN	A	74.2	5.6	0.0	0.0	0.0	61.8	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	12.0
855	547673.30	4801062.07	305.34	0	DEN	A	74.2	1.9	0.0	0.0	0.0	58.1	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	12.3
859	547670.85	4801060.15	305.37	0	DEN	A	74.2	1.8	0.0	0.0	0.0	58.1	1.5	-0.4	0.0	0.0	0.0	0.0	0.0	16.9
874	547705.47	4801070.49	305.00	0	DEN	A	74.2	2.9	0.0	0.0	0.0	59.2	1.6	-0.4	0.0	0.0	4.6	0.0	0.0	12.1
897	547918.85	4801124.26	307.00	0	DEN	A	74.2	8.0	0.0	0.0	0.0	64.3	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	15.7
920	547933.09	4801127.36	307.00	0	DEN	A	74.2	8.1	0.0	0.0	0.0	64.6	2.6	-0.5	0.0	0.0	0.0	0.0	0.0	15.6
939	547832.97	4801092.68	305.00	0	DEN	A	74.2	6.0	0.0	0.0	0.0	62.6	2.2	-0.6	0.0	0.0	0.0	0.0	0.0	16.0
948	547678.63	4801065.81	305.34	0	DEN	A	74.2	1.6	0.0	0.0	0.0	58.3	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	11.9
963	547778.82	4801077.33	305.00	0	DEN	A	74.2	4.6	0.0	0.0	0.0	61.3	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	11.6
980	547784.39	4801077.65	305.00	0	DEN	A	74.2	4.7	0.0	0.0	0.0	61.5	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	11.5
990	547654.12	4801101.57	307.06	0	DEN	A	74.2	0.3	0.0	0.0	0.0	57.1	1.4	0.7	0.0	0.0	4.1	0.0	0.0	11.3
997	547689.26	4801067.66	305.00	0	DEN	A	74.2	1.9	0.0	0.0	0.0	58.6	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	11.7
1003	547641.45	4801053.73	306.00	0	DEN	A	74.2	0.2	0.0	0.0	0.0	57.0	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	16.4
1009	547677.37	4801065.26	305.37	0	DEN	A	74.2	1.4	0.0	0.0	0.0	58.2	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	11.7
1019	547696.11	4801068.86	305.25	0	DEN	A	74.2	1.9	0.0	0.0	0.0	58.9	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	11.5
1024	547671.95	4801061.01	305.35	0	DEN	A	74.2	1.0	0.0	0.0	0.0	58.1	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	11.5
1050	547903.87	4801120.99	307.00	0	DEN	A	74.2	6.8	0.0	0.0	0.0	64.1	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	14.9
1058	547683.62	4801066.68	305.25	0	DEN	A	74.2	1.2	0.0	0.0	0.0	58.5	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	11.3
1067	547645.52	4801093.90	307.00	0	DEN	A	74.2	-0.6	0.0	0.0	0.0	56.7	1.3	0.4	0.0	0.0	4.1	0.0	0.0	11.0
1074	547694.68	4801068.61	305.10	0	DEN	A	74.2	1.4	0.0	0.0	0.0	58.8	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	11.1
1089	547893.74	4801118.78	306.95	0	DEN	A	74.2	6.4	0.0	0.0	0.0	63.9	2.4	-0.5	0.0	0.0	0.0	0.0	0.0	14.8
1095	547687.75	4801067.40	305.10	0	DEN	A	74.2	1.1	0.0	0.0	0.0	58.6	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	11.0
1105	547741.69	4801075.16	305.00	0	DEN	A	74.2	2.7	0.0	0.0	0.0	60.3	1.8	-0.5	0.0	0.0	4.7	0.0	0.0	10.6
1113	547649.36	4801097.33	307.00	0	DEN	A	74.2	-0.7	0.0	0.0	0.0	56.9	1.3	0.5	0.0	0.0	4.1	0.0	0.0	10.7
1118	547660.48	4801107.24	308.00	0	DEN	A	74.2	-0.3	0.0	0.0	0.0	57.3	1.4	0.9	0.0	0.0	3.9	0.0	0.0	10.4
1128	547699.74	4801069.49	305.09	0	DEN	A	74.2	1.4	0.0	0.0	0.0	59.0	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	10.9
1135	547630.66	4801078.87	306.00	0	DEN	A	74.2	-1.4	0.0	0.0	0.0	56.2	1.3	-0.0	0.0	0.0	4.5	0.0	0.0	10.8
1142	547667.03	4801057.17	305.43	0	DEN	A	74.2	0.2	0.0	0.0	0.0	57.9	1.5	-0.4	0.0	0.0	0.0	0.0	0.0	15.4
1147	547651.68	4801099.39	307.00	0	DEN	A	74.2	-0.8	0.0	0.0	0.0	57.0	1.4	0.6	0.0	0.0	4.1	0.0	0.0	10.4
1153	547649.98	4801097.88	307.00	0	DEN	A	74.2	-0.9	0.0	0.0	0.0	56.9	1.3	0.5	0.0	0.0	4.1	0.0	0.0	10.4
1165	547750.52	4801075.67	305.00	0	DEN	A	74.2	2.6	0.0	0.0	0.0	60.5	1.8	-0.5	0.0	0.0	4.6	0.0	0.0	10.3
1171	547633.80	4801082.30	306.20	0	DEN	A	74.2	-1.6	0.0	0.0	0.0	56.3	1.3	0.1	0.0	0.0	4.3	0.0	0.0	10.6
1191	547786.96	4801078.09	305.00	0	DEN	A	74.2	3.6	0.0	0.0	0.0	61.5	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	10.3
1211	547825.46	4801090.29	305.00	0	DEN	A	74.2	4.4	0.0	0.0	0.0	62.4	2.2	-0.6	0.0	0.0	0.0	0.0	0.0	14.6
1218	547702.69	4801070.01	305.00	0	DEN	A	74.2	1.1	0.0	0.0	0.0	59.1	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	10.5
1245	547845.84	4801096.96	305.41	0	DEN	A	74.2	4.8	0.0	0.0	0.0	62.9	2.2	-0.5	0.0	0.0	0.0	0.0	0.0	14.5
1250	547634.25	4801082.80	306.25	0	DEN	A	74.2	-1.8	0.0	0.0	0.0	56.3	1.3	0.1	0.0	0.0	4.3	0.0	0.0	10.4
1266	547771.98	4801076.93	305.00	0	DEN	A	74.2	3.0	0.0	0.0	0.0	61.1	1.9	-0.6	0.0	0.0	4.5	0.0	0.0	10.1
1270	547682.39	4801066.46	305.26	0	DEN	A	74.2	0.2	0.0	0.0	0.0	58.4	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	10.4
1286	547728.14	4801074.37	305.00	0	DEN	A	74.2	1.7	0.0	0.0	0.0	59.9	1.7	-0.5	0.0	0.0	4.9	0.0	0.0	9.8
1294	547633.35	4801081.82	306.15	0	DEN	A	74.2	-2.0	0.0	0.0	0.0	56.3	1.3	0.1	0.0	0.0	4.3	0.0	0.0	10.3
1308	547738.03	4801074.94	305.00	0	DEN	A	74.2	1.9	0.0	0.0	0.0	60.2	1.8	-0.5	0.0	0.0	4.8	0.0	0.0	9.8
1317	547703.92	4801070.22	305.00	0	DEN	A	74.2	0.8	0.0	0.0	0.0	59.1	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	10.1
1332	547729.60	4801074.45	305.00	0	DEN	A	74.2	1.6	0.0	0.0	0.0	59.9	1.8	-0.5	0.0	0.0	5.0	0.0	0.0	9.6
1339	547669.89	4801059.41	305.39	0	DEN	A	74.2	-0.4	0.0	0.0	0.0	58.0	1.5	-0.4	0.0	0.0	0.0	0.0	0.0	14.7
1363	547803.66	4801083.38	305.00	0	DEN	A	74.2	3.3	0.0	0.0	0.0	61.9	2.1	-0.6	0.0	0.0	4.5	0.0	0.0	9.5
1368	547638.25	4801054.11	306.00	0	DEN	A	74.2	-1.8	0.0	0.0	0.0	56.8	1.3	-0.3	0.0	0.0	0.0	0.0	0.0	14.5
1384	547807.45	4801084.58	305.00	0	DEN	A	74.2	3.3	0.0	0.0	0.0	62.0	2.1	-0.6	0.0	0.0	4.5	0.0	0.0	9.4
1403	547858.37	4801102.81	305.50	0	DEN	A	74.2	4.4	0.0	0.0	0.0	63.1	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	13.7
1417	547726.77	4801074.21	305.00	0	DEN	A	74.2	1.1	0.0	0.0	0.0	59.8	1.7	-0.5	0.0	0.0	5.0	0.0	0.0	9.1
1421	547654.81	4801052.14	305.97	0	DEN	A	74.2	-1.2	0.0	0.0	0.0	57.5	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	14.4
1440	547801.70	4801082.76	305.00	0	DEN	A	74.2	2.9	0.0	0.0	0.0	61.9	2.1	-0.6	0.0	0.0	4.5	0.0	0.0	9.2
1456	547790.25	4801079.13	305.00	0	DEN	A	74.2	2.6	0.0	0.0	0.0	61.6	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	9.2
1474	547809.69	4801085.29	305.00	0	DEN	A	74.2	2.9	0.0	0.0	0.0	62.1	2.1	-0.6	0.0	0.0	4.5	0.0	0.0	9.0
1497	547947.80	4801130.57	307.00	0	DEN	A	74.2	5.6	0.0	0.0	0.0	64.9	2.6	-0.5	0.0	0.0	4.5	0.0	0.0	8.3
1519	547942.74	4801129.46	307.00	0	DEN	A	74.2	5.5	0.0	0.0	0.0	64.8	2.6	-0.5	0.0	0.0	4.5	0.0	0.0	8.2
1551	547843.39	4801095.98	305.39	0	DEN	A	74.2	3.5	0.0	0.0	0.0	62.8	2.2	-0.5	0.0	0.0	0.0	0.0	0.0	13.2
1574	547937.95	4801128.42	307.00	0	DEN	A	74.2	5.4	0.0	0.0	0.0	64.7	2.6	-0.5	0.0	0.0	0.0	0.0	0.0	12.7
1589	547768.75	4801076.74	305.00	0	DEN	A	74.2	1.7	0.0	0.0	0.0	61.0	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	8.9
1610	547827.91	4801091.07	305.00	0	DEN	A	74.2	3.0	0.0	0.0	0.0	62.5	2.2	-0.5	0.0	0.0	0.0	0.0	0.0	13.1

Line Source, ISO 9613, Name: "Truck Route", ID: "!0100!01-T1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
1639	547840.72	4801095.13	305.35	0	DEN	A	74.2	3.2	0.0	0.0	0.0	62.8	2.2	-0.5	0.0	0.0	0.0	0.0	0.0	13.0
1666	547908.78	4801122.06	307.00	0	DEN	A	74.2	4.6	0.0	0.0	0.0	64.2	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	12.6
1679	547686.75	4801067.22	305.22	0	DEN	A	74.2	-1.1	0.0	0.0	0.0	58.6	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	8.8
1697	547890.43	4801117.77	306.90	0	DEN	A	74.2	4.1	0.0	0.0	0.0	63.8	2.4	-0.5	0.0	0.0	4.5	0.0	0.0	8.0
1723	547854.45	4801100.98	305.47	0	DEN	A	74.2	3.3	0.0	0.0	0.0	63.1	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	12.7
1731	547680.11	4801066.07	305.31	0	DEN	A	74.2	-1.7	0.0	0.0	0.0	58.3	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	8.5
1743	547681.06	4801066.23	305.28	0	DEN	A	74.2	-1.7	0.0	0.0	0.0	58.4	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	8.5
1756	547770.35	4801076.83	305.00	0	DEN	A	74.2	1.0	0.0	0.0	0.0	61.1	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	8.2
1766	547691.34	4801068.03	305.00	0	DEN	A	74.2	-1.4	0.0	0.0	0.0	58.7	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	8.4
1784	547805.40	4801083.93	305.00	0	DEN	A	74.2	1.8	0.0	0.0	0.0	62.0	2.1	-0.6	0.0	0.0	4.5	0.0	0.0	8.0
1791	547646.52	4801053.13	306.00	0	DEN	A	74.2	-3.0	0.0	0.0	0.0	57.2	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	13.0
1809	547897.02	4801119.50	306.99	0	DEN	A	74.2	3.7	0.0	0.0	0.0	63.9	2.4	-0.5	0.0	0.0	0.0	0.0	0.0	12.0
1832	547951.44	4801131.36	307.00	0	DEN	A	74.2	4.7	0.0	0.0	0.0	64.9	2.6	-0.5	0.0	0.0	4.5	0.0	0.0	7.2
1843	547740.18	4801075.07	305.00	0	DEN	A	74.2	-0.1	0.0	0.0	0.0	60.2	1.8	-0.5	0.0	0.0	4.7	0.0	0.0	7.8
1854	547723.19	4801073.59	305.00	0	DEN	A	74.2	-0.6	0.0	0.0	0.0	59.7	1.7	-0.5	0.0	0.0	5.1	0.0	0.0	7.5
1873	547913.91	4801123.18	307.00	0	DEN	A	74.2	3.8	0.0	0.0	0.0	64.2	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	11.7
1881	547743.08	4801075.24	305.00	0	DEN	A	74.2	-0.4	0.0	0.0	0.0	60.3	1.8	-0.5	0.0	0.0	4.7	0.0	0.0	7.5
1891	547721.82	4801073.35	305.00	0	DEN	A	74.2	-1.0	0.0	0.0	0.0	59.7	1.7	-0.5	0.0	0.0	5.1	0.0	0.0	7.1
1897	547684.86	4801066.89	305.24	0	DEN	A	74.2	-2.2	0.0	0.0	0.0	58.5	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	7.8
1903	547650.72	4801098.54	307.00	0	DEN	A	74.2	-3.8	0.0	0.0	0.0	56.9	1.3	0.6	0.0	0.0	4.1	0.0	0.0	7.4
1909	547640.82	4801089.71	307.00	0	DEN	A	74.2	-4.3	0.0	0.0	0.0	56.5	1.3	0.3	0.0	0.0	4.2	0.0	0.0	7.6
1920	547647.49	4801053.01	306.00	0	DEN	A	74.2	-3.6	0.0	0.0	0.0	57.2	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	12.3
1927	547652.24	4801099.89	307.00	0	DEN	A	74.2	-3.9	0.0	0.0	0.0	57.0	1.4	0.6	0.0	0.0	4.1	0.0	0.0	7.3
1933	547653.34	4801100.87	307.00	0	DEN	A	74.2	-4.1	0.0	0.0	0.0	57.0	1.4	0.6	0.0	0.0	4.1	0.0	0.0	7.0
1937	547631.17	4801079.43	306.00	0	DEN	A	74.2	-4.9	0.0	0.0	0.0	56.2	1.3	-0.0	0.0	0.0	4.4	0.0	0.0	7.4
1959	547922.94	4801125.15	307.00	0	DEN	A	74.2	3.3	0.0	0.0	0.0	64.4	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	11.0
1982	547850.92	4801099.33	305.45	0	DEN	A	74.2	1.8	0.0	0.0	0.0	63.0	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	11.3
1991	547650.42	4801098.27	307.00	0	DEN	A	74.2	-4.3	0.0	0.0	0.0	56.9	1.3	0.5	0.0	0.0	4.1	0.0	0.0	7.0
2000	547697.58	4801069.11	305.30	0	DEN	A	74.2	-2.4	0.0	0.0	0.0	58.9	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	7.2
2007	547698.73	4801069.32	305.21	0	DEN	A	74.2	-2.4	0.0	0.0	0.0	59.0	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	7.1
2012	547653.05	4801100.62	307.00	0	DEN	A	74.2	-4.3	0.0	0.0	0.0	57.0	1.4	0.6	0.0	0.0	4.1	0.0	0.0	6.8
2018	547642.18	4801090.93	307.00	0	DEN	A	74.2	-4.8	0.0	0.0	0.0	56.6	1.3	0.3	0.0	0.0	4.2	0.0	0.0	7.0
2023	547686.12	4801067.11	305.24	0	DEN	A	74.2	-2.9	0.0	0.0	0.0	58.5	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	7.1
2036	547734.11	4801074.71	305.00	0	DEN	A	74.2	-1.3	0.0	0.0	0.0	60.1	1.8	-0.5	0.0	0.0	4.8	0.0	0.0	6.6
2059	547911.81	4801122.72	307.00	0	DEN	A	74.2	2.8	0.0	0.0	0.0	64.2	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	10.7
2068	547698.13	4801069.21	305.28	0	DEN	A	74.2	-2.6	0.0	0.0	0.0	58.9	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	7.0
2076	547681.64	4801066.33	305.27	0	DEN	A	74.2	-3.2	0.0	0.0	0.0	58.4	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	7.0
2096	547847.85	4801097.90	305.43	0	DEN	A	74.2	1.3	0.0	0.0	0.0	62.9	2.2	-0.6	0.0	0.0	0.0	0.0	0.0	10.9
2110	547725.24	4801073.94	305.00	0	DEN	A	74.2	-1.8	0.0	0.0	0.0	59.8	1.7	-0.5	0.0	0.0	5.0	0.0	0.0	6.3
2119	547690.73	4801067.92	305.00	0	DEN	A	74.2	-3.0	0.0	0.0	0.0	58.7	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	6.8
2128	547676.66	4801064.70	305.37	0	DEN	A	74.2	-3.6	0.0	0.0	0.0	58.2	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	6.8
2134	547636.16	4801054.36	306.00	0	DEN	A	74.2	-5.1	0.0	0.0	0.0	56.8	1.3	-0.3	0.0	0.0	0.0	0.0	0.0	11.4
2140	547679.56	4801065.97	305.32	0	DEN	A	74.2	-3.5	0.0	0.0	0.0	58.3	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	6.7
2166	547838.32	4801094.37	305.09	0	DEN	A	74.2	0.8	0.0	0.0	0.0	62.7	2.2	-0.5	0.0	0.0	0.0	0.0	0.0	10.7
2181	547774.79	4801077.09	305.00	0	DEN	A	74.2	-0.7	0.0	0.0	0.0	61.2	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	6.4
2185	547631.41	4801079.69	306.00	0	DEN	A	74.2	-5.7	0.0	0.0	0.0	56.2	1.3	0.0	0.0	0.0	4.4	0.0	0.0	6.6
2191	547634.57	4801083.15	306.28	0	DEN	A	74.2	-5.7	0.0	0.0	0.0	56.3	1.3	0.1	0.0	0.0	4.3	0.0	0.0	6.5
2199	547775.64	4801077.14	305.00	0	DEN	A	74.2	-0.8	0.0	0.0	0.0	61.2	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	6.2
2209	547795.21	4801080.70	305.00	0	DEN	A	74.2	-0.5	0.0	0.0	0.0	61.7	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	6.0
2216	547676.33	4801064.44	305.36	0	DEN	A	74.2	-4.1	0.0	0.0	0.0	58.2	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	6.3
2237	547800.03	4801082.23	305.00	0	DEN	A	74.2	-0.5	0.0	0.0	0.0	61.8	2.1	-0.6	0.0	0.0	4.5	0.0	0.0	5.9
2248	547733.45	4801074.68	305.00	0	DEN	A	74.2	-2.3	0.0	0.0	0.0	60.0	1.8	-0.5	0.0	0.0	4.9	0.0	0.0	5.7
2268	547900.83	4801120.33	307.00	0	DEN	A	74.2	1.6	0.0	0.0	0.0	64.0	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	9.8
2277	547701.09	4801069.73	305.00	0	DEN	A	74.2	-3.4	0.0	0.0	0.0	59.0	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	6.1
2285	547630.98	4801079.22	306.00	0	DEN	A	74.2	-6.2	0.0	0.0	0.0	56.2	1.3	-0.0	0.0	0.0	4.5	0.0	0.0	6.0
2299	547736.88	4801074.88	305.00	0	DEN	A	74.2	-2.3	0.0	0.0	0.0	60.1	1.8	-0.5	0.0	0.0	4.8	0.0	0.0	5.6
2320	547837.24	4801094.03	305.00	0	DEN	A	74.2	0.2	0.0	0.0	0.0	62.7	2.2	-0.6	0.0	0.0	0.0	0.0	0.0	10.1
2336	547773.73	4801077.03	305.00	0	DEN	A	74.2	-1.3	0.0	0.0	0.0	61.2	1.9	-0.6	0.0	0.0	4.5	0.0	0.0	5.8
2358	547925.27	4801125.65	307.00	0	DEN	A	74.2	2.0	0.0	0.0	0.0	64.5	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	9.6
2369	547685.35	4801066.98	305.24	0	DEN	A	74.2	-4.0	0.0	0.0	0.0	58.5	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	6.0
2389	547898.83	4801119.89	307.00	0	DEN	A	74.2	1.4	0.0	0.0	0.0	64.0	2.4	-0.5	0.0	0.0	0.0	0.0	0.0	9.6
2396	547645.99	4801053.19	306.00	0	DEN	A	74.2	-5.4	0.0	0.0	0.0	57.2	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	10.6
2406	547661.17	4801107.85	308.00	0	DEN	A	74.2	-5.3	0.0	0.0	0.0	57.3	1.4	0.9	0.0	0.0	3.9	0.0	0.0	5.3
2420	547736.31	4801074.84	305.00	0	DEN	A	74.2	-2.6	0.0	0.0	0.0	60.1	1.8	-0.5	0.0	0.0	4.8	0.0	0.0	5.4
2427	547652.64	4801100.25	307.00	0	DEN	A	74.2	-5.7	0.0	0.0	0.0	57.0	1.4	0.6	0.0	0.0	4.1	0.0	0.0	5.4
2432	547651.17	4801098.94	307.00	0	DEN	A	74.2	-5.8	0.0	0.0	0.0	56.9	1.3	0.6	0.0	0.0	4.1	0.0	0.0	5.4
2445	547725.81	4801074.04	305.00	0	DEN	A	74.2	-3.0	0.0	0.0	0.0	59.8	1.7	-0.5	0.0	0.0	5.0	0.0	0.0	5.1

Line Source, ISO 9613, Name: "Truck Route", ID: "!0100!01-T1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
2466	547835.33	4801093.43	305.00	0	DEN	A	74.2	-0.2	0.0	0.0	0.0	62.6	2.2	-0.6	0.0	0.0	0.0	0.0	0.0	9.7
2472	547631.57	4801079.87	306.00	0	DEN	A	74.2	-6.6	0.0	0.0	0.0	56.2	1.3	0.0	0.0	0.0	4.4	0.0	0.0	5.7
2481	547654.07	4801052.23	306.00	0	DEN	A	74.2	-5.3	0.0	0.0	0.0	57.5	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	10.3
2488	547647.14	4801053.05	306.00	0	DEN	A	74.2	-5.7	0.0	0.0	0.0	57.2	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	10.2
2499	547659.95	4801106.77	308.00	0	DEN	A	74.2	-5.7	0.0	0.0	0.0	57.3	1.4	0.9	0.0	0.0	3.9	0.0	0.0	5.1
2515	547780.94	4801077.45	305.00	0	DEN	A	74.2	-1.6	0.0	0.0	0.0	61.4	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	5.3
2525	547660.93	4801107.64	308.00	0	DEN	A	74.2	-5.6	0.0	0.0	0.0	57.3	1.4	0.9	0.0	0.0	3.9	0.0	0.0	5.0
2534	547630.35	4801078.53	306.00	0	DEN	A	74.2	-6.8	0.0	0.0	0.0	56.2	1.3	-0.1	0.0	0.0	4.5	0.0	0.0	5.5
2543	547656.06	4801051.99	305.90	0	DEN	A	74.2	-5.4	0.0	0.0	0.0	57.6	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	10.1
2552	547697.10	4801069.03	305.30	0	DEN	A	74.2	-4.2	0.0	0.0	0.0	58.9	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	5.4
2567	547852.70	4801100.17	305.46	0	DEN	A	74.2	-0.1	0.0	0.0	0.0	63.0	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	9.3
2573	547631.71	4801080.03	306.00	0	DEN	A	74.2	-7.0	0.0	0.0	0.0	56.2	1.3	0.0	0.0	0.0	4.4	0.0	0.0	5.3
2585	547735.13	4801074.77	305.00	0	DEN	A	74.2	-3.1	0.0	0.0	0.0	60.1	1.8	-0.5	0.0	0.0	4.8	0.0	0.0	4.9
2591	547672.57	4801061.50	305.34	0	DEN	A	74.2	-5.1	0.0	0.0	0.0	58.1	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	5.4
2606	547849.80	4801098.81	305.44	0	DEN	A	74.2	-0.3	0.0	0.0	0.0	63.0	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	9.2
2614	547645.10	4801093.53	307.00	0	DEN	A	74.2	-6.5	0.0	0.0	0.0	56.7	1.3	0.4	0.0	0.0	4.1	0.0	0.0	5.0
2624	547632.01	4801080.35	306.00	0	DEN	A	74.2	-7.0	0.0	0.0	0.0	56.2	1.3	0.1	0.0	0.0	4.4	0.0	0.0	5.2
2639	547792.52	4801079.85	305.00	0	DEN	A	74.2	-1.6	0.0	0.0	0.0	61.7	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	4.9
2665	547839.31	4801094.69	305.25	0	DEN	A	74.2	-0.6	0.0	0.0	0.0	62.7	2.2	-0.5	0.0	0.0	0.0	0.0	0.0	9.2
2687	547906.80	4801121.63	307.00	0	DEN	A	74.2	0.8	0.0	0.0	0.0	64.1	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	8.9
2700	547723.83	4801073.70	305.00	0	DEN	A	74.2	-3.6	0.0	0.0	0.0	59.8	1.7	-0.5	0.0	0.0	5.0	0.0	0.0	4.5
2720	547829.78	4801091.66	305.00	0	DEN	A	74.2	-0.9	0.0	0.0	0.0	62.5	2.2	-0.6	0.0	0.0	0.0	0.0	0.0	9.1
2728	547653.57	4801101.08	307.00	0	DEN	A	74.2	-6.5	0.0	0.0	0.0	57.0	1.4	0.6	0.0	0.0	4.1	0.0	0.0	4.6
2745	547766.19	4801076.59	305.00	0	DEN	A	74.2	-2.6	0.0	0.0	0.0	61.0	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	4.7
2760	547788.75	4801078.65	305.00	0	DEN	A	74.2	-2.1	0.0	0.0	0.0	61.6	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	4.6
2779	547927.06	4801126.05	307.00	0	DEN	A	74.2	0.9	0.0	0.0	0.0	64.5	2.6	-0.5	0.0	0.0	0.0	0.0	0.0	8.5
2784	547633.07	4801081.52	306.11	0	DEN	A	74.2	-7.4	0.0	0.0	0.0	56.3	1.3	0.1	0.0	0.0	4.3	0.0	0.0	4.9
2788	547655.62	4801052.04	305.92	0	DEN	A	74.2	-6.1	0.0	0.0	0.0	57.6	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	9.5
2797	547684.42	4801066.82	305.24	0	DEN	A	74.2	-5.2	0.0	0.0	0.0	58.5	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	4.8
2814	547776.52	4801077.19	305.00	0	DEN	A	74.2	-2.4	0.0	0.0	0.0	61.2	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	4.6
2823	547680.59	4801066.15	305.29	0	DEN	A	74.2	-5.4	0.0	0.0	0.0	58.4	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	4.7
2837	547767.76	4801076.68	305.00	0	DEN	A	74.2	-2.9	0.0	0.0	0.0	61.0	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	4.3
2851	547734.68	4801074.75	305.00	0	DEN	A	74.2	-3.9	0.0	0.0	0.0	60.1	1.8	-0.5	0.0	0.0	4.8	0.0	0.0	4.1
2870	547793.67	4801080.21	305.00	0	DEN	A	74.2	-2.3	0.0	0.0	0.0	61.7	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	4.2
2876	547649.53	4801052.77	306.00	0	DEN	A	74.2	-6.8	0.0	0.0	0.0	57.3	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	9.1
2894	547782.00	4801077.51	305.00	0	DEN	A	74.2	-2.7	0.0	0.0	0.0	61.4	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	4.1
2909	547758.48	4801076.14	305.00	0	DEN	A	74.2	-3.4	0.0	0.0	0.0	60.8	1.9	-0.5	0.0	0.0	4.6	0.0	0.0	4.0
2919	547735.56	4801074.80	305.00	0	DEN	A	74.2	-4.2	0.0	0.0	0.0	60.1	1.8	-0.5	0.0	0.0	4.8	0.0	0.0	3.8
2923	547642.50	4801091.21	307.00	0	DEN	A	74.2	-7.7	0.0	0.0	0.0	56.6	1.3	0.3	0.0	0.0	4.2	0.0	0.0	4.1
2932	547642.37	4801091.09	307.00	0	DEN	A	74.2	-7.7	0.0	0.0	0.0	56.6	1.3	0.3	0.0	0.0	4.2	0.0	0.0	4.1
2939	547667.53	4801057.56	305.41	0	DEN	A	74.2	-6.5	0.0	0.0	0.0	58.0	1.5	-0.4	0.0	0.0	0.0	0.0	0.0	8.7
2947	547690.25	4801067.84	305.00	0	DEN	A	74.2	-5.8	0.0	0.0	0.0	58.7	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	4.1
2951	547638.78	4801054.05	306.00	0	DEN	A	74.2	-7.6	0.0	0.0	0.0	56.9	1.3	-0.3	0.0	0.0	0.0	0.0	0.0	8.7
2970	547836.23	4801093.71	305.00	0	DEN	A	74.2	-1.8	0.0	0.0	0.0	62.7	2.2	-0.6	0.0	0.0	0.0	0.0	0.0	8.1
2979	547685.69	4801067.04	305.24	0	DEN	A	74.2	-5.9	0.0	0.0	0.0	58.5	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	4.0
2994	547794.20	4801080.38	305.00	0	DEN	A	74.2	-2.8	0.0	0.0	0.0	61.7	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	3.7
3002	547636.39	4801054.33	306.00	0	DEN	A	74.2	-7.7	0.0	0.0	0.0	56.8	1.3	-0.3	0.0	0.0	0.0	0.0	0.0	8.7
3016	547765.25	4801076.53	305.00	0	DEN	A	74.2	-3.6	0.0	0.0	0.0	60.9	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	3.7
3024	547654.34	4801052.20	305.99	0	DEN	A	74.2	-7.1	0.0	0.0	0.0	57.5	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	8.6
3040	547928.43	4801126.34	307.00	0	DEN	A	74.2	-0.1	0.0	0.0	0.0	64.5	2.6	-0.5	0.0	0.0	0.0	0.0	0.0	7.5
3047	547643.46	4801053.49	306.00	0	DEN	A	74.2	-7.7	0.0	0.0	0.0	57.1	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	8.4
3056	547700.55	4801069.63	305.01	0	DEN	A	74.2	-5.8	0.0	0.0	0.0	59.0	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	3.7
3064	547739.32	4801075.02	305.00	0	DEN	A	74.2	-4.6	0.0	0.0	0.0	60.2	1.8	-0.5	0.0	0.0	4.8	0.0	0.0	3.3
3082	547940.55	4801128.99	307.00	0	DEN	A	74.2	-0.1	0.0	0.0	0.0	64.7	2.6	-0.5	0.0	0.0	4.5	0.0	0.0	2.7
3097	547765.67	4801076.56	305.00	0	DEN	A	74.2	-3.9	0.0	0.0	0.0	61.0	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	3.4
3114	547764.82	4801076.51	305.00	0	DEN	A	74.2	-4.1	0.0	0.0	0.0	60.9	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	3.2
3128	547722.35	4801073.44	305.00	0	DEN	A	74.2	-5.4	0.0	0.0	0.0	59.7	1.7	-0.5	0.0	0.0	5.1	0.0	0.0	2.7
3170	547829.13	4801091.46	305.00	0	DEN	A	74.2	-2.6	0.0	0.0	0.0	62.5	2.2	-0.5	0.0	0.0	0.0	0.0	0.0	7.4
3175	547655.83	4801052.02	305.91	0	DEN	A	74.2	-7.6	0.0	0.0	0.0	57.6	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	8.0
3187	547743.73	4801075.28	305.00	0	DEN	A	74.2	-4.9	0.0	0.0	0.0	60.3	1.8	-0.5	0.0	0.0	4.7	0.0	0.0	3.0
3196	547631.82	4801080.15	306.00	0	DEN	A	74.2	-9.0	0.0	0.0	0.0	56.2	1.3	0.1	0.0	0.0	4.4	0.0	0.0	3.3
3214	547945.59	4801130.08	307.00	0	DEN	A	74.2	-0.5	0.0	0.0	0.0	64.8	2.6	-0.5	0.0	0.0	4.5	0.0	0.0	2.3
3235	547963.24	4801134.07	307.00	0	DEN	A	74.2	-0.2	0.0	0.0	0.0	65.1	2.7	-0.5	0.0	0.0	4.5	0.0	0.0	2.2
3251	547793.19	4801080.06	305.00	0	DEN	A	74.2	-3.7	0.0	0.0	0.0	61.7	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	2.8
3254	547655.42	4801052.07	305.93	0	DEN	A	74.2	-7.8	0.0	0.0	0.0	57.6	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	7.8
3263	547701.73	4801069.84	305.00	0	DEN	A	74.2	-6.4	0.0	0.0	0.0	59.1	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	3.0
3266	547651.02	4801098.81	307.00	0	DEN	A	74.2	-8.5	0.0	0.0	0.0	56.9	1.3	0.6	0.0	0.0	4.1	0.0	0.0	2.7

Line Source, ISO 9613, Name: "Truck Route", ID: "!0100!01-T1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
3278	547767.33	4801076.66	305.00	0	DEN	A	74.2	-4.5	0.0	0.0	0.0	61.0	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	2.8
3285	547649.21	4801052.81	306.00	0	DEN	A	74.2	-8.2	0.0	0.0	0.0	57.3	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	7.7
3289	547661.36	4801108.02	308.00	0	DEN	A	74.2	-8.1	0.0	0.0	0.0	57.3	1.4	0.9	0.0	0.0	3.9	0.0	0.0	2.5
3312	547929.52	4801126.58	307.00	0	DEN	A	74.2	-1.0	0.0	0.0	0.0	64.5	2.6	-0.5	0.0	0.0	0.0	0.0	0.0	6.6
3322	547781.54	4801077.49	305.00	0	DEN	A	74.2	-4.2	0.0	0.0	0.0	61.4	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	2.6
3339	547910.53	4801122.44	307.00	0	DEN	A	74.2	-1.4	0.0	0.0	0.0	64.2	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	6.6
3365	547849.13	4801098.50	305.44	0	DEN	A	74.2	-2.7	0.0	0.0	0.0	62.9	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	6.9
3369	547646.20	4801053.16	306.00	0	DEN	A	74.2	-8.5	0.0	0.0	0.0	57.2	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	7.5
3379	547655.26	4801052.09	305.94	0	DEN	A	74.2	-8.1	0.0	0.0	0.0	57.6	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	7.5
3386	547631.91	4801080.23	306.00	0	DEN	A	74.2	-9.4	0.0	0.0	0.0	56.2	1.3	0.1	0.0	0.0	4.4	0.0	0.0	2.8
3398	547795.82	4801080.90	305.00	0	DEN	A	74.2	-4.1	0.0	0.0	0.0	61.7	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	2.3
3406	547651.32	4801099.07	307.00	0	DEN	A	74.2	-8.9	0.0	0.0	0.0	57.0	1.4	0.6	0.0	0.0	4.1	0.0	0.0	2.3
3412	547650.92	4801098.72	307.00	0	DEN	A	74.2	-8.9	0.0	0.0	0.0	56.9	1.3	0.6	0.0	0.0	4.1	0.0	0.0	2.3
3431	547851.84	4801099.76	305.45	0	DEN	A	74.2	-2.9	0.0	0.0	0.0	63.0	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	6.5
3438	547652.03	4801099.71	307.00	0	DEN	A	74.2	-8.9	0.0	0.0	0.0	57.0	1.4	0.6	0.0	0.0	4.1	0.0	0.0	2.2
3460	547899.81	4801120.11	307.00	0	DEN	A	74.2	-2.0	0.0	0.0	0.0	64.0	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	6.3
3465	547649.35	4801052.79	306.00	0	DEN	A	74.2	-8.6	0.0	0.0	0.0	57.3	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	7.2
3481	547964.33	4801134.32	307.00	0	DEN	A	74.2	-0.8	0.0	0.0	0.0	65.2	2.7	-0.5	0.0	0.0	4.5	0.0	0.0	1.5
3492	547724.38	4801073.80	305.00	0	DEN	A	74.2	-6.3	0.0	0.0	0.0	59.8	1.7	-0.5	0.0	0.0	5.0	0.0	0.0	1.8
3499	547638.63	4801054.07	306.00	0	DEN	A	74.2	-9.3	0.0	0.0	0.0	56.9	1.3	-0.3	0.0	0.0	0.0	0.0	0.0	7.1
3510	547724.16	4801073.76	305.00	0	DEN	A	74.2	-6.4	0.0	0.0	0.0	59.8	1.7	-0.5	0.0	0.0	5.0	0.0	0.0	1.7
3519	547700.77	4801069.67	305.00	0	DEN	A	74.2	-7.1	0.0	0.0	0.0	59.0	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	2.3
3532	547794.62	4801080.51	305.00	0	DEN	A	74.2	-4.5	0.0	0.0	0.0	61.7	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	2.0
3548	547782.74	4801077.56	305.00	0	DEN	A	74.2	-4.8	0.0	0.0	0.0	61.4	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	2.0
3560	547789.21	4801078.80	305.00	0	DEN	A	74.2	-4.7	0.0	0.0	0.0	61.6	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	2.0
3572	547724.80	4801073.87	305.00	0	DEN	A	74.2	-6.5	0.0	0.0	0.0	59.8	1.7	-0.5	0.0	0.0	5.0	0.0	0.0	1.7
3583	547780.43	4801077.42	305.00	0	DEN	A	74.2	-4.9	0.0	0.0	0.0	61.3	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	2.0
3588	547652.87	4801100.45	307.00	0	DEN	A	74.2	-9.3	0.0	0.0	0.0	57.0	1.4	0.6	0.0	0.0	4.1	0.0	0.0	1.8
3602	547782.42	4801077.54	305.00	0	DEN	A	74.2	-5.0	0.0	0.0	0.0	61.4	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	1.8
3608	547701.41	4801069.78	305.00	0	DEN	A	74.2	-7.4	0.0	0.0	0.0	59.0	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	2.0
3629	547965.27	4801134.54	307.00	0	DEN	A	74.2	-1.4	0.0	0.0	0.0	65.2	2.7	-0.5	0.0	0.0	4.5	0.0	0.0	0.9
3642	547791.65	4801079.57	305.00	0	DEN	A	74.2	-5.0	0.0	0.0	0.0	61.6	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	1.6
3658	547856.40	4801101.89	305.49	0	DEN	A	74.2	-3.5	0.0	0.0	0.0	63.1	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	5.8
3663	547652.78	4801100.38	307.00	0	DEN	A	74.2	-9.6	0.0	0.0	0.0	57.0	1.4	0.6	0.0	0.0	4.1	0.0	0.0	1.5
3684	547915.37	4801123.50	307.00	0	DEN	A	74.2	-2.4	0.0	0.0	0.0	64.3	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	5.5
3692	547721.11	4801073.22	305.00	0	DEN	A	74.2	-7.0	0.0	0.0	0.0	59.7	1.7	-0.5	0.0	0.0	5.1	0.0	0.0	1.1
3703	547722.67	4801073.50	305.00	0	DEN	A	74.2	-7.0	0.0	0.0	0.0	59.7	1.7	-0.5	0.0	0.0	5.1	0.0	0.0	1.2
3707	547646.83	4801053.09	306.00	0	DEN	A	74.2	-9.6	0.0	0.0	0.0	57.2	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	6.4
3717	547724.60	4801073.83	305.00	0	DEN	A	74.2	-7.0	0.0	0.0	0.0	59.8	1.7	-0.5	0.0	0.0	5.0	0.0	0.0	1.1
3728	547720.91	4801073.19	305.00	0	DEN	A	74.2	-7.2	0.0	0.0	0.0	59.7	1.7	-0.5	0.0	0.0	5.1	0.0	0.0	1.0
3746	547776.94	4801077.22	305.00	0	DEN	A	74.2	-5.6	0.0	0.0	0.0	61.3	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	1.4
3765	547777.22	4801077.23	305.00	0	DEN	A	74.2	-5.6	0.0	0.0	0.0	61.3	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	1.4
3769	547646.96	4801053.07	306.00	0	DEN	A	74.2	-9.7	0.0	0.0	0.0	57.2	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	6.3
3782	548094.09	4801164.32	307.00	0	DEN	A	74.2	0.2	0.0	0.0	0.0	67.1	3.1	-0.4	0.0	0.0	4.4	0.0	0.0	0.1
3793	547774.23	4801077.06	305.00	0	DEN	A	74.2	-5.8	0.0	0.0	0.0	61.2	1.9	-0.6	0.0	0.0	4.5	0.0	0.0	1.3
3800	547642.02	4801053.66	306.00	0	DEN	A	74.2	-10.0	0.0	0.0	0.0	57.0	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	6.2
3815	547806.27	4801084.21	305.00	0	DEN	A	74.2	-5.0	0.0	0.0	0.0	62.0	2.1	-0.6	0.0	0.0	4.5	0.0	0.0	1.1
3825	547739.59	4801075.03	305.00	0	DEN	A	74.2	-6.8	0.0	0.0	0.0	60.2	1.8	-0.5	0.0	0.0	4.8	0.0	0.0	1.1
3844	547966.16	4801134.74	307.00	0	DEN	A	74.2	-1.9	0.0	0.0	0.0	65.2	2.7	-0.5	0.0	0.0	4.5	0.0	0.0	0.4
3850	547660.09	4801106.89	308.00	0	DEN	A	74.2	-9.8	0.0	0.0	0.0	57.3	1.4	0.9	0.0	0.0	3.9	0.0	0.0	0.9
3872	547924.23	4801125.43	307.00	0	DEN	A	74.2	-2.7	0.0	0.0	0.0	64.4	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	5.0
3895	547853.31	4801100.45	305.46	0	DEN	A	74.2	-4.2	0.0	0.0	0.0	63.0	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	5.2
3909	547808.61	4801084.95	305.00	0	DEN	A	74.2	-5.2	0.0	0.0	0.0	62.0	2.1	-0.6	0.0	0.0	4.5	0.0	0.0	0.9
3914	547688.44	4801067.52	305.00	0	DEN	A	74.2	-8.8	0.0	0.0	0.0	58.6	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	1.1
3932	547984.39	4801138.96	307.00	0	DEN	A	74.2	-2.0	0.0	0.0	0.0	65.5	2.8	-0.5	0.0	0.0	4.5	0.0	0.0	-0.0
3945	547966.88	4801134.91	307.00	0	DEN	A	74.2	-2.4	0.0	0.0	0.0	65.2	2.7	-0.5	0.0	0.0	4.5	0.0	0.0	-0.1
3956	547766.97	4801076.63	305.00	0	DEN	A	74.2	-6.6	0.0	0.0	0.0	61.0	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	0.7
3971	547810.76	4801085.63	305.00	0	DEN	A	74.2	-5.5	0.0	0.0	0.0	62.1	2.1	-0.6	0.0	0.0	4.5	0.0	0.0	0.5
3990	547830.31	4801091.83	305.00	0	DEN	A	74.2	-5.3	0.0	0.0	0.0	62.5	2.2	-0.6	0.0	0.0	0.0	0.0	0.0	4.7
4011	547985.10	4801139.12	307.00	0	DEN	A	74.2	-2.4	0.0	0.0	0.0	65.5	2.8	-0.5	0.0	0.0	4.5	0.0	0.0	-0.5
4022	547773.25	4801077.00	305.00	0	DEN	A	74.2	-6.7	0.0	0.0	0.0	61.2	1.9	-0.6	0.0	0.0	4.5	0.0	0.0	0.4
4028	547721.32	4801073.26	305.00	0	DEN	A	74.2	-8.2	0.0	0.0	0.0	59.7	1.7	-0.5	0.0	0.0	5.1	0.0	0.0	-0.1
4033	547653.69	4801101.18	307.00	0	DEN	A	74.2	-10.9	0.0	0.0	0.0	57.0	1.4	0.6	0.0	0.0	4.1	0.0	0.0	0.1
4042	547738.96	4801075.00	305.00	0	DEN	A	74.2	-7.8	0.0	0.0	0.0	60.2	1.8	-0.5	0.0	0.0	4.8	0.0	0.0	0.2
4048	547701.91	4801069.87	305.00	0	DEN	A	74.2	-9.0	0.0	0.0	0.0	59.1	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	0.4
4055	547758.79	4801076.16	305.00	0	DEN	A	74.2	-7.3	0.0	0.0	0.0	60.8	1.9	-0.5	0.0	0.0	4.6	0.0	0.0	0.2
4064	547735.96	4801074.82	305.00	0	DEN	A	74.2	-8.0	0.0	0.0	0.0	60.1	1.8	-0.5	0.0	0.0	4.8	0.0	0.0	-0.1

Line Source, ISO 9613, Name: "Truck Route", ID: "!0100!01-T1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
4067	547645.88	4801094.22	307.00	0	DEN	A	74.2	-11.4	0.0	0.0	0.0	56.7	1.3	0.4	0.0	0.0	4.2	0.0	0.0	0.1
4090	547944.93	4801129.94	307.00	0	DEN	A	74.2	-3.4	0.0	0.0	0.0	64.8	2.6	-0.5	0.0	0.0	4.5	0.0	0.0	-0.6
4094	547701.56	4801069.81	305.00	0	DEN	A	74.2	-9.2	0.0	0.0	0.0	59.1	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	0.3
4107	547788.16	4801078.46	305.00	0	DEN	A	74.2	-6.7	0.0	0.0	0.0	61.5	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	-0.1
4121	547985.81	4801139.29	307.00	0	DEN	A	74.2	-2.8	0.0	0.0	0.0	65.5	2.8	-0.5	0.0	0.0	4.5	0.0	0.0	-0.9
4130	547788.36	4801078.53	305.00	0	DEN	A	74.2	-6.8	0.0	0.0	0.0	61.6	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	-0.1
4136	547690.07	4801067.80	305.00	0	DEN	A	74.2	-9.7	0.0	0.0	0.0	58.7	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	0.1
4140	547690.43	4801067.87	305.00	0	DEN	A	74.2	-9.8	0.0	0.0	0.0	58.7	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	0.0
4143	547652.44	4801100.07	307.00	0	DEN	A	74.2	-11.5	0.0	0.0	0.0	57.0	1.4	0.6	0.0	0.0	4.1	0.0	0.0	-0.4
4161	547926.23	4801125.86	307.00	0	DEN	A	74.2	-4.0	0.0	0.0	0.0	64.5	2.6	-0.5	0.0	0.0	0.0	0.0	0.0	3.6
4167	547631.30	4801079.57	306.00	0	DEN	A	74.2	-12.4	0.0	0.0	0.0	56.2	1.3	0.0	0.0	0.0	4.4	0.0	0.0	-0.2
4173	547730.50	4801074.50	305.00	0	DEN	A	74.2	-8.7	0.0	0.0	0.0	60.0	1.8	-0.5	0.0	0.0	4.9	0.0	0.0	-0.7
4183	547800.66	4801082.43	305.00	0	DEN	A	74.2	-6.8	0.0	0.0	0.0	61.8	2.1	-0.6	0.0	0.0	4.5	0.0	0.0	-0.5
4194	547776.15	4801077.17	305.00	0	DEN	A	74.2	-7.5	0.0	0.0	0.0	61.2	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	-0.4
4196	547656.24	4801051.97	305.89	0	DEN	A	74.2	-11.2	0.0	0.0	0.0	57.6	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	4.4
4207	547842.21	4801095.61	305.38	0	DEN	A	74.2	-6.0	0.0	0.0	0.0	62.8	2.2	-0.5	0.0	0.0	0.0	0.0	0.0	3.7
4216	547773.06	4801076.99	305.00	0	DEN	A	74.2	-7.7	0.0	0.0	0.0	61.2	1.9	-0.6	0.0	0.0	4.5	0.0	0.0	-0.6
4225	547841.97	4801095.53	305.38	0	DEN	A	74.2	-6.1	0.0	0.0	0.0	62.8	2.2	-0.5	0.0	0.0	0.0	0.0	0.0	3.6
4232	547791.41	4801079.49	305.00	0	DEN	A	74.2	-7.3	0.0	0.0	0.0	61.6	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	-0.7
4247	547855.53	4801101.49	305.48	0	DEN	A	74.2	-5.9	0.0	0.0	0.0	63.1	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	3.5
4255	547791.94	4801079.66	305.00	0	DEN	A	74.2	-7.4	0.0	0.0	0.0	61.6	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	-0.8
4262	547766.78	4801076.62	305.00	0	DEN	A	74.2	-8.0	0.0	0.0	0.0	61.0	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	-0.8
4272	547792.11	4801079.72	305.00	0	DEN	A	74.2	-7.4	0.0	0.0	0.0	61.6	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	-0.9
4280	547758.18	4801076.12	305.00	0	DEN	A	74.2	-8.4	0.0	0.0	0.0	60.8	1.9	-0.5	0.0	0.0	4.6	0.0	0.0	-0.9
4291	547810.99	4801085.70	305.00	0	DEN	A	74.2	-7.1	0.0	0.0	0.0	62.1	2.1	-0.6	0.0	0.0	4.5	0.0	0.0	-1.0
4293	547652.52	4801100.15	307.00	0	DEN	A	74.2	-12.2	0.0	0.0	0.0	57.0	1.4	0.6	0.0	0.0	4.1	0.0	0.0	-1.1
4301	547830.80	4801091.99	305.00	0	DEN	A	74.2	-6.8	0.0	0.0	0.0	62.5	2.2	-0.6	0.0	0.0	0.0	0.0	0.0	3.2
4306	547830.55	4801091.91	305.00	0	DEN	A	74.2	-6.8	0.0	0.0	0.0	62.5	2.2	-0.6	0.0	0.0	0.0	0.0	0.0	3.2
4314	547769.56	4801076.79	305.00	0	DEN	A	74.2	-8.3	0.0	0.0	0.0	61.1	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	-1.1
4318	547640.98	4801089.85	307.00	0	DEN	A	74.2	-12.9	0.0	0.0	0.0	56.6	1.3	0.3	0.0	0.0	4.2	0.0	0.0	-1.1
4320	547730.37	4801074.50	305.00	0	DEN	A	74.2	-9.7	0.0	0.0	0.0	59.9	1.8	-0.5	0.0	0.0	4.9	0.0	0.0	-1.7
4331	547927.81	4801126.21	307.00	0	DEN	A	74.2	-5.2	0.0	0.0	0.0	64.5	2.6	-0.5	0.0	0.0	0.0	0.0	0.0	2.4
4335	547744.01	4801075.29	305.00	0	DEN	A	74.2	-9.4	0.0	0.0	0.0	60.4	1.8	-0.5	0.0	0.0	4.7	0.0	0.0	-1.6
4343	547766.64	4801076.62	305.00	0	DEN	A	74.2	-8.8	0.0	0.0	0.0	61.0	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	-1.5
4352	547852.16	4801099.92	305.46	0	DEN	A	74.2	-6.9	0.0	0.0	0.0	63.0	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	2.6
4354	547702.01	4801069.89	305.00	0	DEN	A	74.2	-10.8	0.0	0.0	0.0	59.1	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	-1.4
4358	547640.66	4801089.57	307.00	0	DEN	A	74.2	-13.4	0.0	0.0	0.0	56.5	1.3	0.3	0.0	0.0	4.2	0.0	0.0	-1.6
4361	547739.09	4801075.01	305.00	0	DEN	A	74.2	-9.8	0.0	0.0	0.0	60.2	1.8	-0.5	0.0	0.0	4.8	0.0	0.0	-1.9
4368	547856.11	4801101.76	305.48	0	DEN	A	74.2	-7.0	0.0	0.0	0.0	63.1	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	2.4
4373	547791.25	4801079.44	305.00	0	DEN	A	74.2	-8.5	0.0	0.0	0.0	61.6	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	-1.9
4381	547826.87	4801090.74	305.00	0	DEN	A	74.2	-7.7	0.0	0.0	0.0	62.5	2.2	-0.5	0.0	0.0	0.0	0.0	0.0	2.4
4388	547824.05	4801089.85	305.00	0	DEN	A	74.2	-7.7	0.0	0.0	0.0	62.4	2.2	-0.6	0.0	0.0	4.5	0.0	0.0	-2.1
4392	547735.80	4801074.81	305.00	0	DEN	A	74.2	-10.1	0.0	0.0	0.0	60.1	1.8	-0.5	0.0	0.0	4.8	0.0	0.0	-2.1
4398	547792.92	4801079.97	305.00	0	DEN	A	74.2	-8.6	0.0	0.0	0.0	61.7	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	-2.0
4405	547939.76	4801128.81	307.00	0	DEN	A	74.2	-5.7	0.0	0.0	0.0	64.7	2.6	-0.5	0.0	0.0	4.5	0.0	0.0	-2.8
4411	547855.81	4801101.62	305.48	0	DEN	A	74.2	-7.3	0.0	0.0	0.0	63.1	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	2.0
4416	547726.10	4801074.10	305.00	0	DEN	A	74.2	-10.7	0.0	0.0	0.0	59.8	1.7	-0.5	0.0	0.0	5.0	0.0	0.0	-2.6
4423	547856.77	4801102.07	305.49	0	DEN	A	74.2	-7.4	0.0	0.0	0.0	63.1	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	1.9
4424	547640.63	4801089.54	307.00	0	DEN	A	74.2	-14.0	0.0	0.0	0.0	56.5	1.3	0.3	0.0	0.0	4.2	0.0	0.0	-2.2
4428	547796.07	4801080.97	305.00	0	DEN	A	74.2	-8.9	0.0	0.0	0.0	61.7	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	-2.5
4432	547722.53	4801073.47	305.00	0	DEN	A	74.2	-11.0	0.0	0.0	0.0	59.7	1.7	-0.5	0.0	0.0	5.1	0.0	0.0	-2.8
4438	547766.52	4801076.61	305.00	0	DEN	A	74.2	-9.7	0.0	0.0	0.0	61.0	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	-2.4
4443	547643.56	4801053.48	306.00	0	DEN	A	74.2	-13.7	0.0	0.0	0.0	57.1	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	2.4
4449	547929.02	4801126.47	307.00	0	DEN	A	74.2	-6.3	0.0	0.0	0.0	64.5	2.6	-0.5	0.0	0.0	0.0	0.0	0.0	1.3
4459	548038.65	4801151.50	307.00	0	DEN	A	74.2	-4.5	0.0	0.0	0.0	66.3	3.0	-0.5	0.0	0.0	4.5	0.0	0.0	-3.6
4464	547737.22	4801074.90	305.00	0	DEN	A	74.2	-10.8	0.0	0.0	0.0	60.2	1.8	-0.5	0.0	0.0	4.8	0.0	0.0	-2.8
4474	548038.30	4801151.42	307.00	0	DEN	A	74.2	-4.6	0.0	0.0	0.0	66.3	3.0	-0.5	0.0	0.0	4.5	0.0	0.0	-3.7
4486	547848.56	4801098.23	305.44	0	DEN	A	74.2	-8.0	0.0	0.0	0.0	62.9	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	1.6
4490	547682.94	4801066.56	305.25	0	DEN	A	74.2	-12.6	0.0	0.0	0.0	58.4	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	-2.5
4499	548037.89	4801151.33	307.00	0	DEN	A	74.2	-4.6	0.0	0.0	0.0	66.3	3.0	-0.5	0.0	0.0	4.5	0.0	0.0	-3.8
4506	547816.84	4801087.56	305.00	0	DEN	A	74.2	-8.8	0.0	0.0	0.0	62.2	2.1	-0.6	0.0	0.0	4.5	0.0	0.0	-2.9
4513	547740.71	4801075.10	305.00	0	DEN	A	74.2	-10.8	0.0	0.0	0.0	60.3	1.8	-0.5	0.0	0.0	4.7	0.0	0.0	-2.9
4520	547816.72	4801087.52	305.00	0	DEN	A	74.2	-8.8	0.0	0.0	0.0	62.2	2.1	-0.6	0.0	0.0	4.5	0.0	0.0	-3.0
4533	548057.06	4801155.76	307.00	0	DEN	A	74.2	-4.5	0.0	0.0	0.0	66.6	3.0	-0.5	0.0	0.0	4.4	0.0	0.0	-4.0
4537	547800.51	4801082.38	305.00	0	DEN	A	74.2	-9.4	0.0	0.0	0.0	61.8	2.1	-0.6	0.0	0.0	4.5	0.0	0.0	-3.1
4548	547949.68	4801130.98	307.00	0	DEN	A	74.2	-6.5	0.0	0.0	0.0	64.9	2.6	-0.5	0.0	0.0	4.5	0.0	0.0	-3.8
4556	547944.57	4801129.86	307.00	0	DEN	A	74.2	-6.7	0.0	0.0	0.0	64.8	2.6	-0.5	0.0	0.0	4.5	0.0	0.0	-3.9

Line Source, ISO 9613, Name: "Truck Route", ID: "!0100!01-T1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
4559	547699.04	4801069.37	305.17	0	DEN	A	74.2	-12.5	0.0	0.0	0.0	59.0	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	-3.0
4572	547949.90	4801131.02	307.00	0	DEN	A	74.2	-6.6	0.0	0.0	0.0	64.9	2.6	-0.5	0.0	0.0	4.5	0.0	0.0	-4.0
4580	547835.85	4801093.59	305.00	0	DEN	A	74.2	-8.9	0.0	0.0	0.0	62.7	2.2	-0.6	0.0	0.0	0.0	0.0	0.0	1.0
4592	547841.79	4801095.47	305.38	0	DEN	A	74.2	-8.8	0.0	0.0	0.0	62.8	2.2	-0.5	0.0	0.0	0.0	0.0	0.0	0.9
4596	547673.92	4801062.56	305.34	0	DEN	A	74.2	-13.5	0.0	0.0	0.0	58.1	1.5	-0.4	0.0	0.0	4.5	0.0	0.0	-3.0
4602	547855.96	4801101.69	305.48	0	DEN	A	74.2	-8.6	0.0	0.0	0.0	63.1	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	0.8
4616	547963.82	4801134.20	307.00	0	DEN	A	74.2	-6.5	0.0	0.0	0.0	65.1	2.7	-0.5	0.0	0.0	4.5	0.0	0.0	-4.2
4620	547738.84	4801074.99	305.00	0	DEN	A	74.2	-11.6	0.0	0.0	0.0	60.2	1.8	-0.5	0.0	0.0	4.8	0.0	0.0	-3.6
4623	547685.84	4801067.06	305.24	0	DEN	A	74.2	-13.3	0.0	0.0	0.0	58.5	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	-3.3
4629	547848.69	4801098.29	305.44	0	DEN	A	74.2	-9.0	0.0	0.0	0.0	62.9	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	0.6
4638	547836.60	4801093.83	305.00	0	DEN	A	74.2	-9.3	0.0	0.0	0.0	62.7	2.2	-0.6	0.0	0.0	0.0	0.0	0.0	0.6
4645	547939.98	4801128.86	307.00	0	DEN	A	74.2	-7.3	0.0	0.0	0.0	64.7	2.6	-0.5	0.0	0.0	4.5	0.0	0.0	-4.4
4647	547696.89	4801068.99	305.29	0	DEN	A	74.2	-13.1	0.0	0.0	0.0	58.9	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	-3.6
4656	548094.82	4801164.48	307.00	0	DEN	A	74.2	-5.0	0.0	0.0	0.0	67.2	3.2	-0.4	0.0	0.0	4.4	0.0	0.0	-5.2
4660	547661.29	4801107.96	308.00	0	DEN	A	74.2	-15.0	0.0	0.0	0.0	57.3	1.4	0.9	0.0	0.0	3.9	0.0	0.0	-4.4
4663	547654.23	4801052.21	306.00	0	DEN	A	74.2	-14.8	0.0	0.0	0.0	57.5	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	0.8
4666	547661.05	4801107.74	308.00	0	DEN	A	74.2	-15.0	0.0	0.0	0.0	57.3	1.4	0.9	0.0	0.0	3.9	0.0	0.0	-4.4
4674	547964.83	4801134.43	307.00	0	DEN	A	74.2	-7.3	0.0	0.0	0.0	65.2	2.7	-0.5	0.0	0.0	4.5	0.0	0.0	-5.0
4682	547767.11	4801076.64	305.00	0	DEN	A	74.2	-11.6	0.0	0.0	0.0	61.0	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	-4.3
4687	547830.99	4801092.05	305.00	0	DEN	A	74.2	-10.0	0.0	0.0	0.0	62.5	2.2	-0.6	0.0	0.0	0.0	0.0	0.0	-0.0
4693	547857.04	4801102.19	305.49	0	DEN	A	74.2	-9.5	0.0	0.0	0.0	63.1	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	-0.2
4695	547743.93	4801075.29	305.00	0	DEN	A	74.2	-12.3	0.0	0.0	0.0	60.4	1.8	-0.5	0.0	0.0	4.7	0.0	0.0	-4.5
4697	547698.43	4801069.26	305.24	0	DEN	A	74.2	-13.8	0.0	0.0	0.0	59.0	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	-4.3
4704	547915.72	4801123.58	307.00	0	DEN	A	74.2	-8.5	0.0	0.0	0.0	64.3	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	-0.6
4709	548113.38	4801168.78	307.00	0	DEN	A	74.2	-5.4	0.0	0.0	0.0	67.4	3.2	-0.4	0.0	0.0	4.4	0.0	0.0	-5.8
4715	548113.74	4801168.86	307.00	0	DEN	A	74.2	-5.4	0.0	0.0	0.0	67.4	3.2	-0.4	0.0	0.0	4.4	0.0	0.0	-5.9
4718	547642.08	4801053.65	306.00	0	DEN	A	74.2	-15.9	0.0	0.0	0.0	57.0	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	0.3
4723	547781.32	4801077.47	305.00	0	DEN	A	74.2	-11.7	0.0	0.0	0.0	61.4	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	-4.8
4725	547652.48	4801100.10	307.00	0	DEN	A	74.2	-16.2	0.0	0.0	0.0	57.0	1.4	0.6	0.0	0.0	4.1	0.0	0.0	-5.0
4730	547848.82	4801098.36	305.44	0	DEN	A	74.2	-10.2	0.0	0.0	0.0	62.9	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	-0.7
4736	547836.70	4801093.86	305.00	0	DEN	A	74.2	-10.5	0.0	0.0	0.0	62.7	2.2	-0.6	0.0	0.0	0.0	0.0	0.0	-0.7
4741	547721.22	4801073.24	305.00	0	DEN	A	74.2	-13.6	0.0	0.0	0.0	59.7	1.7	-0.5	0.0	0.0	5.1	0.0	0.0	-5.5
4747	547965.70	4801134.64	307.00	0	DEN	A	74.2	-8.1	0.0	0.0	0.0	65.2	2.7	-0.5	0.0	0.0	4.5	0.0	0.0	-5.8
4752	547791.15	4801079.41	305.00	0	DEN	A	74.2	-11.7	0.0	0.0	0.0	61.6	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	-5.1
4756	548132.39	4801173.07	307.00	0	DEN	A	74.2	-5.7	0.0	0.0	0.0	67.7	3.3	-0.4	0.0	0.0	4.4	0.0	0.0	-6.4
4759	547652.41	4801100.04	307.00	0	DEN	A	74.2	-16.4	0.0	0.0	0.0	57.0	1.4	0.6	0.0	0.0	4.1	0.0	0.0	-5.3
4763	547720.80	4801073.17	305.00	0	DEN	A	74.2	-13.9	0.0	0.0	0.0	59.7	1.7	-0.5	0.0	0.0	5.1	0.0	0.0	-5.8
4765	547646.89	4801053.08	306.00	0	DEN	A	74.2	-16.6	0.0	0.0	0.0	57.2	1.4	-0.4	0.0	0.0	0.0	0.0	0.0	-0.6
4770	547721.41	4801073.28	305.00	0	DEN	A	74.2	-14.3	0.0	0.0	0.0	59.7	1.7	-0.5	0.0	0.0	5.1	0.0	0.0	-6.1
4777	547966.54	4801134.83	307.00	0	DEN	A	74.2	-8.8	0.0	0.0	0.0	65.2	2.7	-0.5	0.0	0.0	4.5	0.0	0.0	-6.6
4779	547652.49	4801100.12	307.00	0	DEN	A	74.2	-17.2	0.0	0.0	0.0	57.0	1.4	0.6	0.0	0.0	4.1	0.0	0.0	-6.1
4784	547769.66	4801076.79	305.00	0	DEN	A	74.2	-13.3	0.0	0.0	0.0	61.1	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	-6.1
4791	547984.76	4801139.04	307.00	0	DEN	A	74.2	-9.0	0.0	0.0	0.0	65.5	2.8	-0.5	0.0	0.0	4.5	0.0	0.0	-7.1
4799	547967.22	4801134.99	307.00	0	DEN	A	74.2	-9.5	0.0	0.0	0.0	65.2	2.7	-0.5	0.0	0.0	4.5	0.0	0.0	-7.3
4807	547856.63	4801102.00	305.49	0	DEN	A	74.2	-11.8	0.0	0.0	0.0	63.1	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	-2.4
4811	547830.67	4801091.95	305.00	0	DEN	A	74.2	-12.5	0.0	0.0	0.0	62.5	2.2	-0.6	0.0	0.0	0.0	0.0	0.0	-2.5
4819	547985.44	4801139.20	307.00	0	DEN	A	74.2	-9.7	0.0	0.0	0.0	65.5	2.8	-0.5	0.0	0.0	4.5	0.0	0.0	-7.8
4826	547769.70	4801076.79	305.00	0	DEN	A	74.2	-14.2	0.0	0.0	0.0	61.1	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	-7.0
4831	547735.87	4801074.82	305.00	0	DEN	A	74.2	-15.2	0.0	0.0	0.0	60.1	1.8	-0.5	0.0	0.0	4.8	0.0	0.0	-7.2
4838	547791.82	4801079.63	305.00	0	DEN	A	74.2	-13.7	0.0	0.0	0.0	61.6	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	-7.1
4844	547765.89	4801076.57	305.00	0	DEN	A	74.2	-14.4	0.0	0.0	0.0	61.0	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	-7.1
4851	547855.70	4801101.57	305.48	0	DEN	A	74.2	-12.4	0.0	0.0	0.0	63.1	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	-3.1
4852	547744.08	4801075.30	305.00	0	DEN	A	74.2	-15.3	0.0	0.0	0.0	60.4	1.8	-0.5	0.0	0.0	4.7	0.0	0.0	-7.4
4853	547743.56	4801075.27	305.00	0	DEN	A	74.2	-15.6	0.0	0.0	0.0	60.3	1.8	-0.5	0.0	0.0	4.7	0.0	0.0	-7.8
4860	547986.11	4801139.35	307.00	0	DEN	A	74.2	-10.5	0.0	0.0	0.0	65.5	2.8	-0.5	0.0	0.0	4.5	0.0	0.0	-8.6
4862	547652.39	4801100.03	307.00	0	DEN	A	74.2	-19.0	0.0	0.0	0.0	57.0	1.4	0.6	0.0	0.0	4.1	0.0	0.0	-7.9
4869	547856.94	4801102.14	305.49	0	DEN	A	74.2	-13.1	0.0	0.0	0.0	63.1	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	-3.8
4874	547830.92	4801092.03	305.00	0	DEN	A	74.2	-13.7	0.0	0.0	0.0	62.5	2.2	-0.6	0.0	0.0	0.0	0.0	0.0	-3.7
4877	547685.56	4801067.02	305.24	0	DEN	A	74.2	-18.0	0.0	0.0	0.0	58.5	1.6	-0.4	0.0	0.0	4.5	0.0	0.0	-8.0
4879	547653.65	4801101.15	307.00	0	DEN	A	74.2	-19.7	0.0	0.0	0.0	57.0	1.4	0.6	0.0	0.0	4.1	0.0	0.0	-8.6
4885	547965.81	4801134.66	307.00	0	DEN	A	74.2	-12.0	0.0	0.0	0.0	65.2	2.7	-0.5	0.0	0.0	4.5	0.0	0.0	-9.7
4892	547985.52	4801139.22	307.00	0	DEN	A	74.2	-11.8	0.0	0.0	0.0	65.5	2.8	-0.5	0.0	0.0	4.5	0.0	0.0	-9.9
4896	547856.90	4801102.13	305.49	0	DEN	A	74.2	-14.3	0.0	0.0	0.0	63.1	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	-5.0
4899	547926.45	4801125.91	307.00	0	DEN	A	74.2	-13.0	0.0	0.0	0.0	64.5	2.6	-0.5	0.0	0.0	0.0	0.0	0.0	-5.4
4906	548019.59	4801147.10	307.00	0	DEN	A	74.2	-11.6	0.0	0.0	0.0	66.1	2.9	-0.5	0.0	0.0	4.5	0.0	0.0	-10.3
4913	547856.87	4801102.11	305.49	0	DEN	A	74.2	-14.7	0.0	0.0	0.0	63.1	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	-5.3
4919	547856.98	4801102.16	305.49	0	DEN	A	74.2	-14.7	0.0	0.0	0.0	63.1	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	-5.4

Line Source, ISO 9613, Name: "Truck Route", ID: "!0100!01-T1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
4923	548038.09	4801151.37	307.00	0	DEN	A	74.2	-11.6	0.0	0.0	0.0	66.3	3.0	-0.5	0.0	0.0	4.5	0.0	0.0	-10.7
4929	547855.66	4801101.55	305.48	0	DEN	A	74.2	-14.9	0.0	0.0	0.0	63.1	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	-5.6
4931	547765.02	4801076.52	305.00	0	DEN	A	74.2	-17.3	0.0	0.0	0.0	60.9	1.9	-0.5	0.0	0.0	4.5	0.0	0.0	-9.9
4935	548056.86	4801155.71	307.00	0	DEN	A	74.2	-11.6	0.0	0.0	0.0	66.6	3.0	-0.5	0.0	0.0	4.4	0.0	0.0	-11.0
4947	548075.30	4801159.97	307.00	0	DEN	A	74.2	-11.6	0.0	0.0	0.0	66.9	3.1	-0.5	0.0	0.0	4.4	0.0	0.0	-11.3
4950	547857.11	4801102.22	305.49	0	DEN	A	74.2	-15.3	0.0	0.0	0.0	63.1	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	-6.0
4954	548037.69	4801151.28	307.00	0	DEN	A	74.2	-12.2	0.0	0.0	0.0	66.3	3.0	-0.5	0.0	0.0	4.5	0.0	0.0	-11.3
4959	547848.77	4801098.33	305.44	0	DEN	A	74.2	-15.7	0.0	0.0	0.0	62.9	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	-6.1
4968	548093.54	4801164.19	307.00	0	DEN	A	74.2	-11.5	0.0	0.0	0.0	67.1	3.1	-0.4	0.0	0.0	4.4	0.0	0.0	-11.6
4973	548113.56	4801168.82	307.00	0	DEN	A	74.2	-11.5	0.0	0.0	0.0	67.4	3.2	-0.4	0.0	0.0	4.4	0.0	0.0	-11.9
4979	547856.68	4801102.02	305.49	0	DEN	A	74.2	-16.0	0.0	0.0	0.0	63.1	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	-6.7
4982	548132.55	4801173.11	307.00	0	DEN	A	74.2	-11.5	0.0	0.0	0.0	67.7	3.3	-0.4	0.0	0.0	4.4	0.0	0.0	-12.2
4985	547847.23	4801097.61	305.42	0	DEN	A	74.2	-17.2	0.0	0.0	0.0	62.9	2.2	-0.6	0.0	0.0	0.0	0.0	0.0	-7.6
4990	547848.88	4801098.38	305.44	0	DEN	A	74.2	-17.2	0.0	0.0	0.0	62.9	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	-7.6
4993	547831.06	4801092.07	305.00	0	DEN	A	74.2	-17.6	0.0	0.0	0.0	62.6	2.2	-0.6	0.0	0.0	0.0	0.0	0.0	-7.6
5000	548094.64	4801164.44	307.00	0	DEN	A	74.2	-13.3	0.0	0.0	0.0	67.1	3.2	-0.4	0.0	0.0	4.4	0.0	0.0	-13.4
5004	547944.69	4801129.89	307.00	0	DEN	A	74.2	-15.9	0.0	0.0	0.0	64.8	2.6	-0.5	0.0	0.0	4.5	0.0	0.0	-13.1
5006	547775.22	4801077.12	305.00	0	DEN	A	74.2	-19.5	0.0	0.0	0.0	61.2	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	-12.4
5010	547777.36	4801077.24	305.00	0	DEN	A	74.2	-19.5	0.0	0.0	0.0	61.3	2.0	-0.6	0.0	0.0	4.5	0.0	0.0	-12.5
5013	547848.75	4801098.32	305.44	0	DEN	A	74.2	-18.4	0.0	0.0	0.0	62.9	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	-8.9
5019	547848.48	4801098.20	305.44	0	DEN	A	74.2	-19.7	0.0	0.0	0.0	62.9	2.3	-0.5	0.0	0.0	0.0	0.0	0.0	-10.2

Appendix E

Consultant's Declaration

CANADA

PROVINCE OF ONTARIO

In the Matter of the Environmental Protection Act and the Planning Act

And in the Matter of Tullis Whistle Bare Aggregate Pit Expansion in the Township of North Dumfries in the Regional Municipality of Waterloo

I, Michael Masschaele, of the City of Waterloo, in the Regional Municipality of Waterloo, SOLEMNLY DECLARE THAT:

1. I am a an Acoustic Specialist with a Limited Engineering License, license number 100508855, issued through the Ontario Professional Engineers Act by Professional Engineers of Ontario (PEO) employed by GHD Limited (GHD) which holds a Certificate of Authorization and have personal knowledge of the matters set out below.
2. I was retained or employed as the principal consultant to undertake the assessment of noise impacts and recommendation of noise mitigation measures for the property described as 1951 Whistle Bare Road in Ayr, Ontario.
3. I have the expertise required to perform these services. Any assessment activities or recommendations requiring the application of engineering principles have been undertaken or supervised by an engineer qualified to perform such services.
4. The information used in the letter report entitled "Noise Impact and Land Use Compatibility Study" dated February 16, 2023 is the best available information as of the date of the study.
5. The noise level calculations, the interpretation of noise attenuation requirements, and the recommended measures are in accordance with Ontario Ministry of Environment Guidelines, Region of Waterloo policies, and any applicable policy or guidelines of the Area Municipality, and any other applicable policy or guideline.
6. The physical noise attenuation measures proposed in this study are feasible to implement and will provide the level of attenuation indicated in the study.
7. I acknowledge that this study may be subject to peer review at my cost.
8. I acknowledge that public authorities and future owners, occupants and others may rely on this statement.

AND I make this solemn Declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath.

DECLARED before me at the City of Waterloo, in the Regional Municipality of Waterloo
This 16th day of February, 2023

Michael Masschaele

Appendix F

Owner's Statement

Name: _____
Address: _____
_____
_____
_____

Re: Noise Impact and Land Use Compatibility Study for the Proposed Tullis Whistle Bare Aggregate Pit Expansion at 1951 Whistle Bare Road in Ayr, Ontario

OWNER'S STATEMENT

I am the owner of the property, or the owner's agent, and that I understand and agree with the noise assessment and potential attenuation measures detailed in the study entitled “Noise Impact and Land Use Compatibility Study” dated February 16th, 2023 for the proposed Tullis Whistle Bare Aggregate Pit Expansion at 1951 Whistle Bare Road in Ayr, Ontario.

If the application is changed in a way that may affect the noise level calculations, I will have a revised noise study submitted to the Region of Waterloo.

_____
Name

_____
Signature

_____
Date