

# Memorandum

**To:** Alexco Resource Corp.

From: Access Consulting Group

**CC:** Kai Woloshyn, Alexco Resource Corp.

**Date:** March 17, 2015

**Re:** Noise Monitoring Data Summary, Keno, YT

#### Introduction

As part of the Keno Hill Silver District Mining Operations Noise Management Plan (the Plan) Alexco Keno Hill Mining Corp. (AKHM) has been monitoring noise levels in Keno City. The Plan was initially developed to address any potential noise effects that might occur with the addition of the two new mines, Lucky Queen and Onek 990. In addition to noise mitigation measures and the creation of a Noise Disturbance Notification Form and Noise Disturbance Register to track noise disturbance claims, AKHM committed to monitor noise levels within the community at various locations to assess the actual versus predicted noise levels and to determine if the noise abatement measures are effective. These noise data can now be used in the context of the Flame and Moth Mine development.

The predicted noise levels were presented in the Noise Impact Assessment (NIA) completed by Patching Associates Acoustical Engineering Ltd (PAAE) conducted during the *Yukon Environmental and Socio-Economic Assessment Act* (YESAA) process (Project 2011-0315). The NIA identifies the noise sources from the current mining-related activities, noise receptors, and predicts the anticipated noise level from all existing sources and those associated with the addition of Lucky Queen and Onek 990 mining operations.

This memo presents noise monitoring results from April 2013 to December 2014.

#### **NOISE RECEPTORS**

AKHM has monitored noise at the five locations selected in the NIA as being potential noise receptors within the 2 km radius study area around Keno City. Starting in November 2013, noise has also been monitored at the Keno City campground. These locations are listed in Table 1 and shown in Figure 1.



Table 1 Representative Locations Assessed in Keno City

Monitoring	GPS Location	Description
Location		
R01	N63.90827 W135.29599	East end Residence, north side of Lightning Creek Road
R02	N63.91019 W135.29968	Residence, east side of Sign Post Road
R03	N63.91023 W135.30205	Town Center, north from the Snack Bar
R04	N63.91239 W135.30376	Residence, west side of Wernecke Road
R05	N63.90851 W135.30993	Residence, about 850m east from the Mill
Cmpgrnd	N63.90772 W135.29998	Keno City campground

The background noise levels experienced by these locations vary considerably, depending on location and local activities. Past and proposed mining operations are in addition to normal fluctuations in background levels. Climate parameters, such as relative humidity, temperature, and temperature inversions impact the sound level and propagation experienced by each of these receptors.

#### **MONITORING TIMING**

For the period from April 2013 to December 2014, a total of 32 monitoring events were carried out. Mining took place at Bellekeno, and milling at the Keno District Mill throughout 2013, until these were suspended on September 3<sup>rd</sup>, 2014. Operations at Onek 990 ceased at the end of May 2013. Exploration activities at Flame & Moth took place from late March to early November 2014. Thus, September 2013 through March 2014 and December 2014 data can be considered as baseline as no mining or exploration activities were taking place at that time.

#### **RESULTS**

The results from 31 monitoring events from April 2013 to November 2014 are presented in Appendix A. These readings were taken using an Extech integrating sound level datalogger model 407780 to measure average dBA over 10 minutes. The wind speed, wind direction, temperature and precipitation data from the Keno District Mill weather station associated with each noise monitoring event have been reported as these can have a significant effect on measured noise levels. Any notable noise sources associated with the monitoring event were also documented.

Starting in December 2014 noise monitoring readings were taken with a Casella CEL-63X Sound Level Meter and a Casella CEL-495 Microphone programmed to record over a 24 hour period. The microphone was mounted on a tri-pod at approximately 1.5 meters above ground and surrounded by a windscreen provided by Casella for use with this microphone to reduce wind impacts as required for outdoor sound measurements. The sound level meter and battery power source were housed inside a weather-proof case which was held in a locked metal box for extra security.

Noise levels measured at all testing locations were well within or below the 50-90 dBA range deemed "what is socially acceptable for daytime noise limits" as defined in the past YESAB assessment for the Bellekeno Mine development (Project 2009-0030), with all measurements being below 70 dBA. Of the 17 measurements above 50 dBA, four occurred on April 8th, 2013 (R01, R02, R03, and R04) and two on May 19th, 2013 (R01 and R03). While this corresponds to the period of operations at Onek, only one observation associated with the measurements appears to be linked with mining operations (May 19th measurement at R03: 'water truck went



by'). In addition, observations for the May 19<sup>th</sup> event refer to creeks flowing, likely at their highest during spring freshet, and birds chirping, while wind conditions for the April 8<sup>th</sup> measurements were recorded as 'Windy SSE'. The crusher was operating during most of the April 8<sup>th</sup>, most of the May 19<sup>th</sup> and all of the June 18<sup>th</sup> noise measurements. No crushing took place during measurements on April 10<sup>th</sup>, May 6<sup>th</sup>, July 24<sup>th</sup>, 2013 or during the winter, but preparation for mantle change out took place on July 24<sup>th</sup>. While the crusher could be a contributing noise source, other natural, anthropogenic or mine-related noise sources likely play an important role.

The other 11 measurements above 50 dBA occurred in 2014, while no mining operations were taking place, although explorations activities occurred during all but three (January 20th - R05, November 14th – R01, and November 23rd – R03) of these above 50 dBA measurements. The elevated January R05 measurement is associated with a Yukon Government grader driving by, while the elevated November measurements are associated with trucks driving by. The activities documented during the April measurement at R03 include a loader driving by, a backup alarm, a car driving by, a car horn, people talking and a dog barking. The elevated May measurement at the campground is associated with the creek, which likely had high flows associated with spring freshet, while the June campground measurement was associated with wind in the trees and the creek. The activities documented during the June measurement at R02 include wind in the trees, a car driving by, a chainsaw, ravens, and people talking, while a pickup truck with the engine running was noted at R02 during the August measurement. On September 3rd, noise measurements above 50 dBA were associated with trucks driving by, dogs barking and wind at R03 and with vehicles, wind and the creek at the campground. On September 18th, noise levels of 53.9 dBA were associated with ATVs and birds at R02.

Figure 2 shows the noise levels measured compared to the predicted current and proposed mining operations noise levels plus ambient sound levels from the NIA. Many of the measurements exceeded the predicted levels, which range from 32 to 39 dBA, both in the period of mining operations and after operations had ceased. No mining or exploration activities took place between September 2013 and March 2014, this period can therefore be considered baseline. As can be observed in Figure 2, the baseline noise levels can vary considerably with different levels of activity in Keno City. Baseline noise levels were greater than those predicted in the NIA on several occasions, indicating that many of the notable noise sources are not linked to Keno mining or milling operations.

Noise levels at the campground were around 30 dBA throughout the winter and increased to around 50 dBA in the spring and summer. This increase is associated with natural sounds such as the creek flowing and birds chirping.

In December 2014 a 24-hour baseline noise monitoring program was initiated, with measurements taken at R02, R03, R05 and the campground. The equipment was set up and run at R01 and R04; however, there was an equipment malfunction and noise levels were not recorded at these sites in December. The equivalent continuous level,  $LA_{eq}$ , defined as the equivalent continuous sound which would contain the same sound energy as the time varying sound, is reported for each site in Table 2.



Table 2 December 2014 24-hour equivalent continuous level

Site	Duration	Start Date/Time	End Date/Time	LA <sub>eq (dB)</sub>
R02	23:59:00	15/12/2014 16:20	16/12/2014 16:19	44.30
R03	23:59:00	17/12/2014 10:00	18/12/2014 9:59	58.60
R05	23:59:00	18/12/2014 10:30	19/12/2014 10:29	42.00
Campground	23:59:00	22/12/2014 12:30	23/12/2014 12:29	25.40

Compared with the sound levels predicted in the NIA for R02, R03 and R05 (36, 32 and 35 dBA, respectively), the equivalent continuous level over 24 hours at all sites exceeded the predictions.

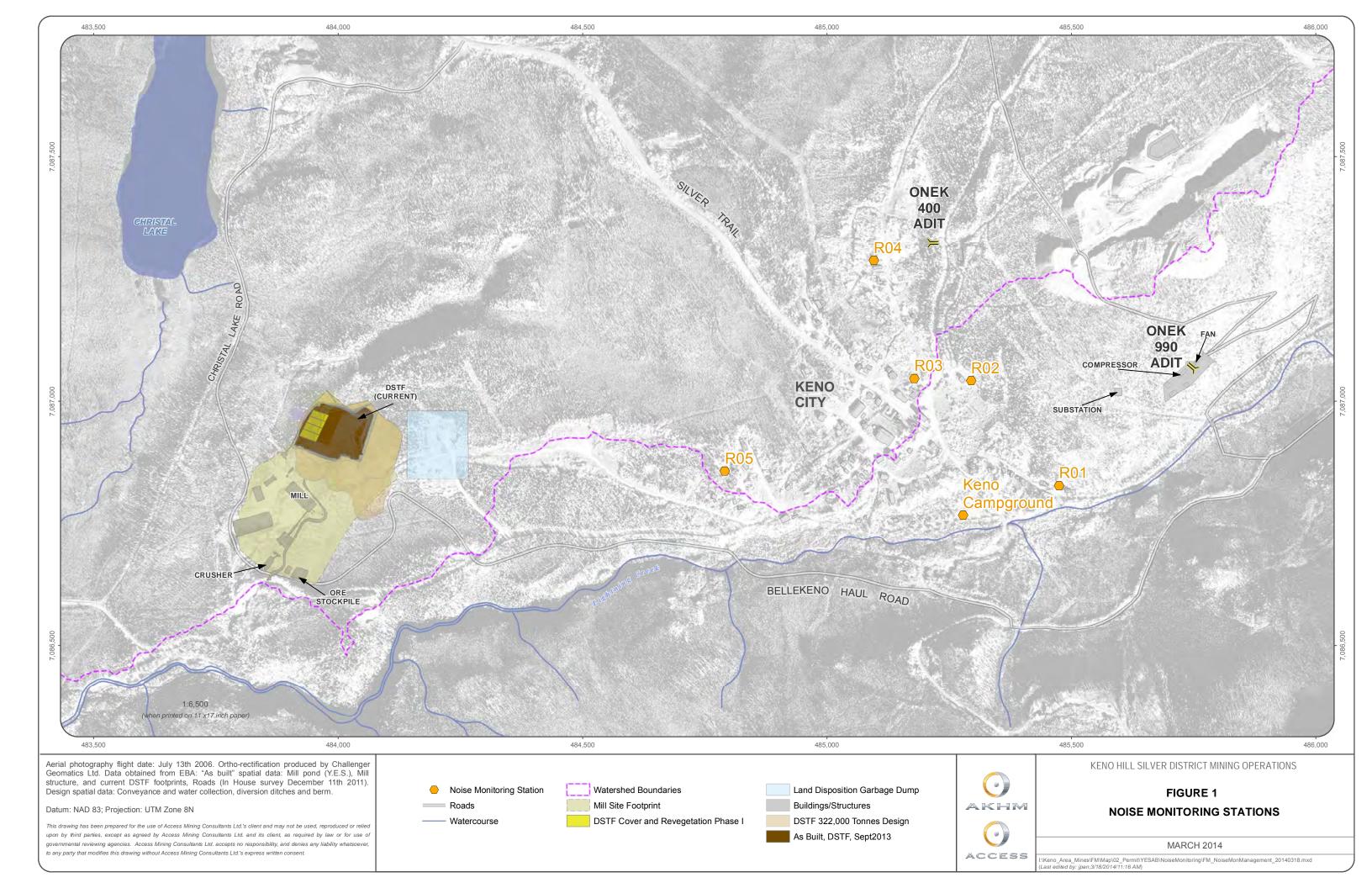
#### **NOISE COMPLAINTS**

One formal noise complaint was received by AKHM in 2014. In August 2014 a noise complaint was received from a Keno City resident. Following investigation to the complaint, the noise complaint received was associated with the activities related to the commencement of a new exploration drill hole on the east side of Lightning Creek by the Flame and Moth exploration program authorised under Mining Land Use Approval LQ0240. Following the findings of the investigation, the commencement of new exploration drill holes in overburden material where hammering is required was identified as an activity to occur between 7AM and 7PM to limit the potential noise impacts to Keno City residents.

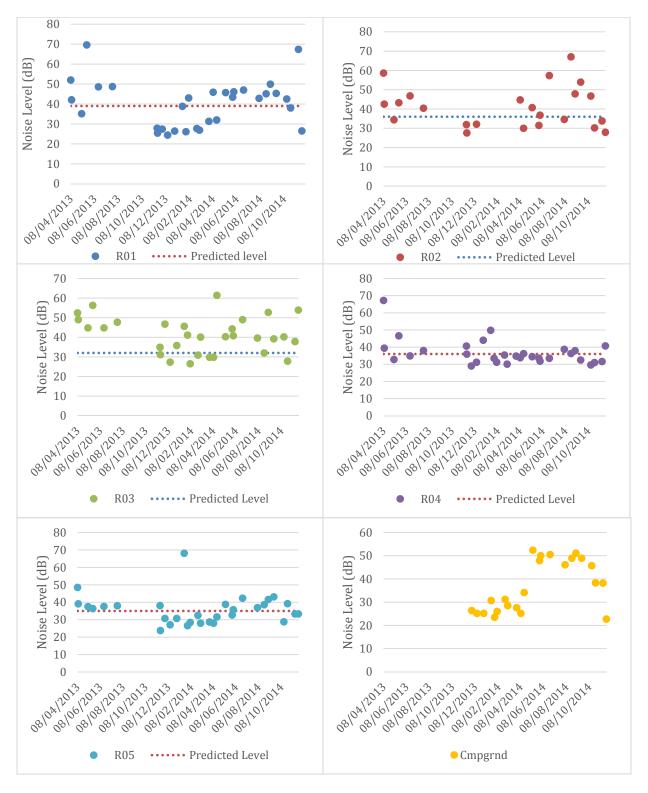
#### **CONCLUSION**

Noise levels measured at all noise receptors were well within or below the 50-90 dBA range deemed to be socially acceptable for daytime noise limits. Many of the measurements exceed the predicted current and proposed mining operations noise levels (plus ambient sound levels) from the NIA, despite the cessation of mining and milling operations in the Keno Hill Silver District in September 2013.

Given the short measurement interval of 10 minutes for measurements prior to December 2014, measurements could have been influenced by fluctuations in background levels and climate parameters impacting noise levels and propagation. However, even over the longer 24-hour interval of measurement in December 2014 while no mining operations or exploration took place, lower noise levels were not measured. Continued monthly monitoring over a 24-hour interval will provide further data which can better inform noise monitoring thresholds. It is recommended that proposed mining operations noise levels plus ambient sound levels generated in the NIA be revised using 24-hour noise monitoring data collected from December 2014 onward while operations have ceased, prior to the re-commencement of mining in the Keno Hill Silver District.







**Figure 2 Keno Noise Monitoring Data** 

## **APPENDIX A**

KENO NOISE MONITORING DATA
SEPTEMBER 2013 TO NOVEMBER 2014

### Keno Noise Monitoring Data

Date	Location	Time	Temp (°C)	Wind	Precipitation	DBA	Observations
08/04/2013	R01	12:26	2	Windy SSE	None	52.0	
08/04/2013	R02	12:05	2	Windy SSE	None	58.6	
08/04/2013	R03	11:45	2	Windy SSE	None	52.4	
08/04/2013	R04	11:25	2	Windy SSE	None	67.2	A dog barked 2 times.
08/04/2013	R05	11:04	2	Windy SSE	None	48.5	
10/04/2013	R01	11:33	-6	Light SSW	None	42.1	
10/04/2013	R02	13:00	-6	Light SSW	None	42.5	
10/04/2013	R03	12:40	-6	Light SSW	None	49.0	Doors slamming. People talking.
10/04/2013	R04	12:20	-6	Light SSW	None	39.4	
10/04/2013	R05	12:00	-6	Light SSW	None	39.1	
06/05/2013	R01	15:30	2	Wind West	None	35.1	Backup alarm at Onek. Tarps flapping in wind.
06/05/2013	R02	15:30	2	Slight breeze	None	34.4	
06/05/2013	R03	15:30	2	Windy	None	44.8	Dog barking. Boart truck.
06/05/2013	R04	15:30	2	Slight breeze	None	32.8	
06/05/2013	R05	15:30	2	Slight breeze	None	37.5	Dog barking.
19/05/2013	R01	10:25	-2	Light (<10km/h) N	Light snow	69.6	Creek flowing loud. Squirrels making noise. Tarp flapping. Volvo going by on the BKR.
19/05/2013	R02	10:10	-2	Light (<10km/h) E	Light snow	43.2	Creek flowing below. A few birds chirping. Boart pickup went by.
19/05/2013	R03	9:55	-2	Light (<10km/h) E	Light snow	56.3	A few birds. Talking and trucks in town in the distance. Water truck went by.
19/05/2013	R04	9:30	-2	Light (<10km/h) E	Light snow	46.6	Lots of birds calling and a woodpecker pecking close by.
19/05/2013	R05	8:55	-2	Light (<10km/h) E	Light snow	36.4	A few birds and a squirrel chirping.
18/06/2013	R01	16:25	22	Light (<10km/h) S	None	48.6	Creek flowing. Leaves rustling.
18/06/2013	R02	16:10	22	Light (<10km/h) S	None	46.8	Volvo on BKR. 2 vehicles drove past. Gusts of wind rustling trees. Chainsaw nearby in town.
18/06/2013	R03	15:55	22	Light (<10km/h) S	None	44.8	People talking and walking close by. 2 Vehicles driving through town and 1 driving by.
18/06/2013	R04	15:40	21	Light (<10km/h) S	None	34.9	Wind rustling leaves. Birds calling.
18/06/2013	R05	14:55	21	Light (<15km/h) S	None	37.6	Wind rustling leaves. Volvo on the BKR.
24/07/2013	R01	11:07	23	light (<20km/h) S	None	48.7	Leaves rustling. Creek nearby. Birds chirping.
24/07/2013	R02	10:55	23	light (<10km/h) S	None	40.4	Three vehicles driving nearby. Leaves rustling.
24/07/2013	R03	10:43	23	light (<10km/h) S	None	47.7	Backup alarm at Mill. Leaves rustling. Someone in town hammering. Two vehicles drove by.
24/07/2013	R04	10:30	23	light (<10km/h) SE	None	38.0	Backup alarm at Mill. Mill crusher. Leaves rustling. Car drove by twice. Car on Silver Trail.
24/07/2013	R05	10:14	23	Calm	None	38.0	Backup alarm at Mill. Volve down BKR. Mill crusher.
16/11/2013	R01	14:11	-20	Calm	None	27.8	Birds.
16/11/2013	R02	13:51	-20	Calm	None	31.9	Squirrel, ravens, birds noise.
16/11/2013	R03	13:35	-20	Calm	None	34.9	Squirrel, ravens, birds noise+ truck.
16/11/2013	R04	13:20	-20	Calm	None	40.6	Lots of ravens activity, birds.
16/11/2013	R05	14:27	-20	Calm	None	38.1	Birds, truck plus door slaming + humain voive + dog barking. All at about 200 meters from sound meter.
17/11/2013	R01	12:46	-30	Calm	None	25.4	Birds.
17/11/2013	R02	12:25	-30	Calm	None	27.6	Birds, squirrel and vehicle.
17/11/2013	R03	12:07	-30	Calm	None	31.1	Ravens, squirrel and vehicle.
17/11/2013	R04	11:48	-30	Calm	None	35.9	Ravens.
17/11/2013	R05	13:01	-30	Calm	None	23.8	Quiet.
29/11/2013	Cmpgrnd	15:08	-23	Calm	None	26.4	Chainsaw in town, birds chirping.
29/11/2013	R01	14:52	-23	Calm	None	27.4	Birds chirping, snowmobile in distance.
29/11/2013	R03	14:36	-23	Calm	None	46.7	Ravens, chainsaw and dog barking in the distance, water truck drove by and backed up (alarm) nearby.
20/11/2012	DO4	14.20	22	Caller	Nama	20.0	
29/11/2013		14:20	-23	Calm	None	29.0	squirrels and little birsds in distance, ravens flying by, someone coughing, doors closing mearby, dog barking.
29/11/2013		13:59	-24	Calm N.W.Calm	None	30.7	Raven calling, snowmobile in distance, squirrel nearby.
13/12/2013		10:55	-20	N-W Calm	None	25.2	Quiet, birds signing once.
13/12/2013		10:35	-20	N-W Calm	None	24.4	Quiet.
13/12/2013		10:17	-20	N-W Calm	None	32.1	Raven, birds, squirrel.
13/12/2013		10:02	-20	N-W Calm	None	27.3	Raven, birds, squirrel.
13/12/2013	R04	9:44	-20	N-W Calm	None	31.2	Raven flying and walking around. Birds signing.

13/12/2013	R05	11:13	-20	N-W Calm	None	27.1	Quiet, squirrel.
31/12/2013		13:52	-20 -18	calm	None	30.7	
							A few little birds chirping.
31/12/2013		14:06	-18	Calm	None	44.0	lots of ravens flying, calling. Dog chewing on bone nearby. Person walking by, closing door.
31/12/2013		14:20	-17	Light (<10km/h)S	None	35.8	Two vehicles drove through town. Flagpole dinging in the wind. People talking, walking in town.
31/12/2013		14:34	-17	Calm	None	26.4	Little birds chirping. Raven flew by.
31/12/2013		14:49	-17	Calm	None	25.2	Ravens calling in distance. Someone coughing. Little birds chirping.
20/01/2014		14:04	-14	Calm	None	49.8	Distant grader. Birds. Vehicle.
20/01/2014		14:24	-13	Calm	None	45.6	Distant grader. Birds.
20/01/2014	Cmpgrnd	14:39	-13	Calm	None	30.7	Distant grader.
20/01/2014	R01	15:13	-14	Calm	None	38.8	Distant grader. Vehicle.
20/01/2014	R05	14:56	-14	Calm	None	68.1	Grader went by.
29/01/2014	R05	15:07	-12	Calm	None	26.6	Squirrels, whiskeyjack calling nearby.
29/01/2014	R04	15:23	-12	Calm	None	33.5	Small bird chirping, ravens calling and flying by.
29/01/2014	R03	15:36	-12	Calm	None	41.1	Ravens calling, truck driving by, squirrel chatting, small bird chirping.
29/01/2014	R01	15:50	-12	Calm	None	26.1	Squirrel chatting, door closing in distance, birds calling, neighbour getting firewood.
29/01/2014	Cmpgrnd	16:06	-12	Calm	None	23.5	Squirrel chatting, bird chirping, ravens flying over and calling.
05/02/2014		12:55	-20	light (5km/h)	None	28.4	Raven calling, squirrel chattering.
05/02/2014		13:12	-20	light(<5km/h)	None	31.2	Small bird chirping, ravens calling and flying, door closing in distance X3, neighbour getting firewood.
05/02/2014		13:27	-20	light(<5km/h)	None	26.5	Ravens calling in distance. Squirrel chattering, small birds, truck creaking.
05/02/2014		13:40	-18	light(<5km/h)	None	43.0	Squirrel chattering, ice inside old dump truck (beside sample site) cracked loudly, birds chirping.
05/02/2014		13:59	-19	light(<5km/h)	None	26.0	Small birds chirping, ravens in distance.
26/02/2014		14:14	-9	Calm	None	32.5	Water truck running nearby, driving. Squirrel chattering, little birds calling.
26/02/2014		14:31	-8	Calm	None	35.4	Ravens calling, person walking by and into house.
20/02/2014	N04	14.51	-0	Callii	None	33.4	navens cannig, person waiking by and into nouse.
26/02/2014	D02	14.50	0	Calaa	Nama	20.0	Late of accionate about a rice about a rice in distance and think a binaries and a front a rich to the contract of
26/02/2014		14:56	-8	Calm	None	30.9	Lots of squirrels chattering, dog barking in distance, small birds chirping, radio from neighbours house, raven calling.
26/02/2014		15:10	-8	Calm	None	27.7	Little birds chirping. Squirrels.
26/02/2014		15:26	-8	Calm	None	31.2	Someone chainsawing in town. Birds chirping.
05/03/2014		14:19	-14	Calm	None	28.0	Raven calling in distance. Lots of little birds chirping nearby.
05/03/2014	R04	14:37	-14	Slight breeze	None	30.1	Ravens calling nearby. Squirrels chattering. Helicopter in distance. Little birds chirping. Ravens flying by.
							Vehicle in town idling. Lots of little birds chirping. Raven calling. Flags tinging on flagpoles. Helicopter in distance.
05/03/2014		14:50	-13	light (<10km/h)	None	40.1	Vehicle driving through town and by twice.
05/03/2014	R01	15:04	-13	calm	None	26.9	lots of little birds chorping. Rvens in distance. Helicopter faintly in distance.
05/03/2014	Cmpgrnd	15:19	-14	very slight breeze	None	28.5	little birds chirping. Ravens in distance. Helicopter in distance. Backup alarm in town.
29/03/2014	R05	14:31	-3	Slight breeze	None	28.7	Lots of small birds calling nearby. Squirrel chattering.
							Ravens calling closeby. Small birds calling. Diamond drill and equipment working in distance. Wind chimes. Someone
29/03/2014	R04	14:48	0	light (10 km/h)	None	34.8	scraping snow.
							Flags hitting flagpoles. Lots of small birds calling nearby. Raven calling. Squirrel chattering. Squirrel climbing on sign
29/03/2014	R03	15:00	0	light (10 km/h)	None	29.8	nearby.
29/03/2014	R01	15:13	0	Slight breeze	None	31.3	Small birds. Squirrel chattering. Steel pipe made sound as it expanded.
							Small birds calling. Bulldozer (drillers) going down Duncan creek road in distance. Someone working on something
29/03/2014	Cmpgrnd	15:34	0	Slight breeze	None	27.6	in town. Raven calling.
09/04/2014		10:04	-10	Calm	None	45.9	Pickup , backup alarm. Birds.
09/04/2014		9:55	-10	Calm	None	44.7	Water truck x 2, delivering.
09/04/2014		9:24	-10	Calm	None	29.8	Water truck x 2, delivering.
09/04/2014		9:00	-10	Calm	None	33.8	Ravens.
09/04/2014		10:47	-10	Calm	None	28.0	Ravens.
		10:47	-10	Calm	None	25.2	Squirrel.
09/04/2014							
18/04/2014		15:43	2	Calm	None	32.0	Birds, loader, backup alarm far away.
18/04/2014		16:22	2	Calm	Snow/rain	30.0	Car, birds.
18/04/2014		15:20	2	Calm	Snow	61.4	Loader, backup alarm. Car +horn. People talking, dog barking.
18/04/2014		15:04	2	Calm	Snow	36.2	Ravens, birds.
18/04/2014		16:37	2	Calm	None	31.6	Birds.
18/04/2014	Cmpgrnd	15:04	2	Calm	Rain/snow	34.2	Birds.

11/05/2014	R01	9:14	strong N wind	None	45.7	Birds, creek.
11/05/2014		8:58		None	40.7	
			Light N wind			Birds, car, house doors slamming.
11/05/2014		8:42	Light N wind	None	40.3	Birds.
11/05/2014		8:27	calme	None	34.4	Birds.
11/05/2014		10:21	Light N wind	None	38.8	Wind in trees, bear or moose cracking branches.
11/05/2014		9:30	Light N wind	None	52.4	Creek.
29/05/2014		10:50	Light SW wind	None	43.4	Creek.
29/05/2014		10:30	Light SW wind	None	31.5	Raven, truck.
29/05/2014		9:50	Light SW wind	None	44.3	Raven, car, truck running idle, starting.
29/05/2014		9:40	Light SW wind	None	33.6	Ravens.
29/05/2014		11:40	Light SW wind	None	32.7	Birds.
29/05/2014		11:20	Light SW wind	None	47.9	Creek.
01/06/2014		15:49	strong wind all directions	None	46.1	Creek, wind, dog barking.
01/06/2014		15:33	strong wind all directions	None	36.8	Doors slamming x 2.
01/06/2014		15:20	strong wind all directions	None	40.8	Truck, trailer, horn.
01/06/2014		15:03	light wind all directions	None	31.8	ATV far away.
01/06/2014	R05	16:18	strong wind all directions	None	35.7	Silent.
01/06/2014	Cmpgrnd	16:03	strong wind all directions	None	50.0	Creek.
26/06/2014	R01	12:52	strong N wind	None	47.0	Wind in trees,creek, birds.
26/06/2014	R02	12:38	strong N wind	None	57.3	Wind in trees, car, chainsaw, ravens, people talking.
26/06/2014	R03	12:25	N wind	None	49.0	Wind in trees, ATV, music, car, ravens.
26/06/2014	R04	12:09	N wind	None	33.5	Wind in trees, birds.
26/06/2014	R05	13:30	N wind	None	42.3	Wind in trees, birds.
26/06/2014	Cmpgrnd	13:11	N wind	None	50.5	Wind in trees, creek.
05/08/2014	R01	10:14	N wind	None	42.8	Wind in trees, creek, birds.
05/08/2014	R02	9:51	N wind	None	34.6	Truck running, people talking, door slamming, wind.
05/08/2014	R03	9:33	N wind	None	39.6	Truck running, people talking, wind.
05/08/2014	R04	9:19	N wind	None	38.7	Car starting, door slamming,, car passing by, wind.
05/08/2014	R05	11:47	N wind	None	36.9	Wind in willows.
05/08/2014	Cmpgrnd	11:17	N wind	None	46.1	Creek, wind, people talking.
23/08/2014	R01	13:36	N wind	None	45.1	Creek, house building.
23/08/2014		13:19	N wind	None	67	Pickup truck, motor running.
23/08/2014		13:07	N wind	None	32	Dog barking x 2, vehicles.
23/08/2014		12:43	N wind	None	36.3	Ravens.
23/08/2014		15:44	N wind	None	38.6	Dump truck, vehicles, drill far away.
23/08/2014		13:54	N wind	None	48.9	Creek, vehicles.
03/09/2014		16:01	W wind, strong	None	49.9	Wind + creek.
03/09/2014		15:47	W wind, strong	None	47.8	Dogs barking, ATV's, wind, door slamming.
03/09/2014		15:35	W wind, strong	None	52.7	2 trucks drove by, dogs barking, wind.
03/09/2014		15:22	W wind, strong	None	37.9	Wind, ravens.
03/09/2014		16:29	W wind, strong	None	41.6	Drill, wind.
03/09/2014		16:15	W wind, strong	None	51.1	Wind, creek, vehicles.
18/09/2014		16:02	NW little wind	None	45.3	Strong wind, creek.
18/09/2014		15:48	NW little wind	None	53.9	ATVs, birds.
18/09/2014		15:35	NW little wind	None	39.2	ATVs, birds.
18/09/2014		15:22	NW little wind	None	32.5	Birds.
18/09/2014		16:30	NW little wind	None	43.1	Little wind, leaves in wind.
18/09/2014		16:30	NW little wind	None	48.9	Strong wind, creek.
15/10/2014		14:28	No Wind	None	48.9	Creek, ravens, birds.
15/10/2014 15/10/2014		14:14	No Wind	None	46.7	Car, ravens, birds, squirrels.
		14:00	No Wind	None	40.2	Car, ravens.
15/10/2014		13:40	No Wind	None	29.6	Squirrel, birds, door slamming.
15/10/2014	R05	15:31	No Wind	None	28.8	Ravens, birds.

15/10/2014 Cmpgrnd	14:46	No Wind	None	45.7	Creek, ravens, birds.
25/10/2014 R01	9:33	No Wind	None	38.0	Calm, creek, ravens, birds.
25/10/2014 R02	9:08	No Wind	None	30.2	Calm, ravens, birds.
25/10/2014 R03	8:53	No Wind	None	27.8	Calm, ravens, birds.
25/10/2014 R04	8:37	No Wind	None	31.0	Calm, ravens, birds.
25/10/2014 R05	10:36	No Wind	None	39.2	Calm, ravens.
25/10/2014 Cmpgrnd	10:22	No Wind	None	38.3	Calm, creek, ravens.
14/11/2014 R01	10:57	No Wind	None	67.4	Water truck, squirrel, creek.
14/11/2014 RO2	10:37	No Wind	None	33.8	Calm.
14/11/2014 R03	10:10	No Wind	None	37.8	Car x 2.
14/11/2014 R04	9:56	No Wind	None	31.6	Ravens, calm.
14/11/2014 R05	11:30	No Wind	None	33.3	Calm.
14/11/2014 Cmpgrnd	11:12	No Wind	None	38.2	Creek, truck.
23/11/2014 R01	9:45	No Wind	None	26.5	Squirrel.
23/11/2014 R02	9:22	No Wind	None	27.9	Ravens.
23/11/2014 R03	9:01	No Wind	None	53.9	Ravens, truck x2.
23/11/2014 R04	8:46	No Wind	None	40.7	Ravens, truck idling.
23/11/2014 R05	10:12	No Wind	None	33.3	Ravens.
23/11/2014 Cmpgrnd	9:58	No Wind	None	22.7	Ravens.
01/12/2014					Noise Mointoring coverted to 24 hours from 10 min measurements in December 2014
4411 11 11			40==00.	40 of a Boothy form 46 (44 (42 tolors) the a Corolla CEL COV and all the a Blob	

<sup>\*</sup>All readings are taken using an Extech integrating sound level datalogger model 407780 to measure DBA for 10 min.Reading from 16/11/13 taken with an Casella CEL-63X model.(Laeq, Db.)