

# **APPENDIX D**

## *Construction and Operational Noise Analysis*



# Noise Measurement Data

**Field Noise Measurement Data**

Record: 262

|              |                  |
|--------------|------------------|
| Project Name | Pomona Yard      |
| Observer(s)  | Connor Burke     |
| Date         | 2016-11-16       |
| autoemail    | cburke@dudek.com |

**Meteorological Conditions**

|                   |          |
|-------------------|----------|
| Temp (F)          | 65       |
| Humidity % (R.H.) | 50       |
| Wind              | Calm     |
| Wind Speed (MPH)  | 3        |
| Wind Direction    | East     |
| Sky               | Overcast |

**Instrument and Calibrator Information**

|                            |                  |
|----------------------------|------------------|
| Instrument Name List       | (ENC) Rion NL-52 |
| Instrument Name            | (ENC) Rion NL-52 |
| Instrument Name Lookup Key | (ENC) Rion NL-52 |
| Manufacturer               | Rion             |
| Model                      | NL-52            |
| Serial Number              | 553896           |
| Calibrator Name            | (ENC) LD CAL150  |
| Calibrator Name            | (ENC) LD CAL150  |
| Calibrator Name Lookup Key | (ENC) LD CAL150  |
| Calibrator Manufacturer    | Larson Davis     |
| Calibrator Model           | LD CAL150        |
| Calibrator Serial #        | 5152             |
| Pre-Test (dBA SPL)         | 94               |
| Post-Test (dBA SPL)        | 94               |
| Windscreen                 | Yes              |
| Weighting?                 | A-WTD            |
| Slow/Fast?                 | Slow             |
| ANSI?                      | Yes              |

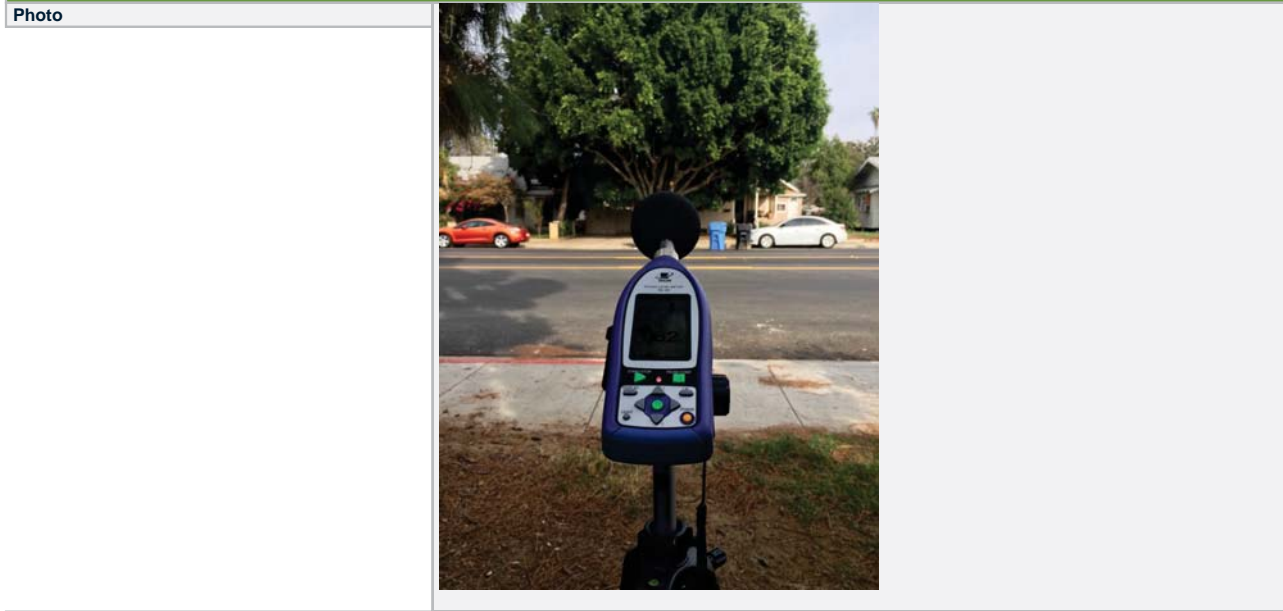
**Recordings**

|                        |   |
|------------------------|---|
| Record #               | 1   |
| Site ID                | M5  |
| Site Location          | Latitude:34.060234,<br>Longitude:-117.759822,<br>Altitude:261.770496,<br>Speed:0.460000,<br>Horizontal Accuracy:5.000000,<br>Vertical Accuracy:3.000000,<br>Time:9:35:04 AM PST |
| Begin (Time)           | 09:34:00  |
| End (Time)             | 09:44:00  |
| Leq                    | 69.3  |
| Lmax                   | 90.4  |
| Lmin                   | 42.1  |
| Other Lx?              | L90, L50, L10   |
| L90                    | 47.8  |
| L50                    | 55.8  |
| L10                    | 64.5  |
| Other (Specify Metric) |   |
| Primary Noise Source   | Traffic   |

|   |   |
|---|---|
| Other Noise Sources (Background)  | Birds, Distant Dog Barking, Distant Industrial, Distant Traffic |
| Other Noise Sources Additional Description                              | Ambulance noise. Medium trucks coming out of yard.              |
| Is the same instrument and calibrator being used as previously notated? | Yes   |
| Are the meteorological conditions the same as previously notated?       | Yes   |

**Description / Photos**

**Site Photos**



|                               |                                    |
|-------------------------------|------------------------------------|
| <b>Comments / Description</b> | Facing north towards Monterey Ave. |
|-------------------------------|------------------------------------|


**Recordings**

|   |   |
|---|---|
| <b>Record #</b>                                   | 2   |
| <b>Site ID</b>                                    | M2  |
| <b>Site Location</b>                              | Latitude:34.059829,<br>Longitude:-117.761299,<br>Altitude:255.489124,<br>Speed:0.000000,<br>Horizontal Accuracy:5.000000,<br>Vertical Accuracy:6.000000,<br>Time:9:48:30 AM PST |
| <b>Begin (Time)</b>                               | 09:48:00  |
| <b>End (Time)</b>                                 | 09:58:00  |
| <b>Leq</b>  | 51.6  |
| <b>Lmax</b>                                       | 63.6  |
| <b>Lmin</b>                                       | 39.8  |
| <b>Other Lx?</b>                                  | L90, L50, L10   |
| <b>L90</b>  | 42.4  |
| <b>L50</b>  | 45.6  |
| <b>L10</b>  | 56.4  |
| <b>Other (Specify Metric)</b>                     |   |
| <b>Primary Noise Source</b>                       | Traffic   |
| <b>Other Noise Sources (Background)</b>           | Birds, Distant Aircraft, Distant Dog Barking, Distant Industrial, Distant Traffic, Rustling Leaves  |
| <b>Other Noise Sources Additional Description</b> | Rail noise  |

|   |     |
|---|-----|
| Is the same instrument and calibrator being used as previously notated? | Yes |
| Are the meteorological conditions the same as previously notated?       | Yes |

Description / Photos

Site Photos


| Photo | Site Photos   |
|-------|---|
|       |  |

Recordings

|  |  |
|--|--|
| <b>Record #</b>  | 3  |
| <b>Site ID</b>   | M4   |
| <b>Site Location</b>   |  |
| <b>Begin (Time)</b>  | 10:00:00   |
| <b>End (Time)</b>  | 10:10:00   |
| <b>Leq</b>   | 54.8   |
| <b>Lmax</b>  | 68.1   |
| <b>Lmin</b>  | 43.2   |
| <b>Other Lx?</b>   | L90, L50, L10  |
| <b>L90</b>   | 47.5   |
| <b>L50</b>   | 51.5   |
| <b>L10</b>   | 57.0   |
| <b>Primary Noise Source</b>  | Industrial   |
| <b>Other Noise Sources (Background)</b>  | Birds, Distant Aircraft, Distant Dog Barking, Distant Industrial, Distant Traffic, Rustling Leaves |
| <b>Other Noise Sources Additional Description</b>                              | Trucks leaving the yard. Industrial noise from yard.   |
| <b>Is the same instrument and calibrator being used as previously notated?</b> | Yes  |
| <b>Are the meteorological conditions the same as previously notated?</b>       | Yes  |

Description / Photos

Site Photos

| Photo                  |  |
|------------------------|--|
|                        |  |
| Comments / Description | Facing project site.   |

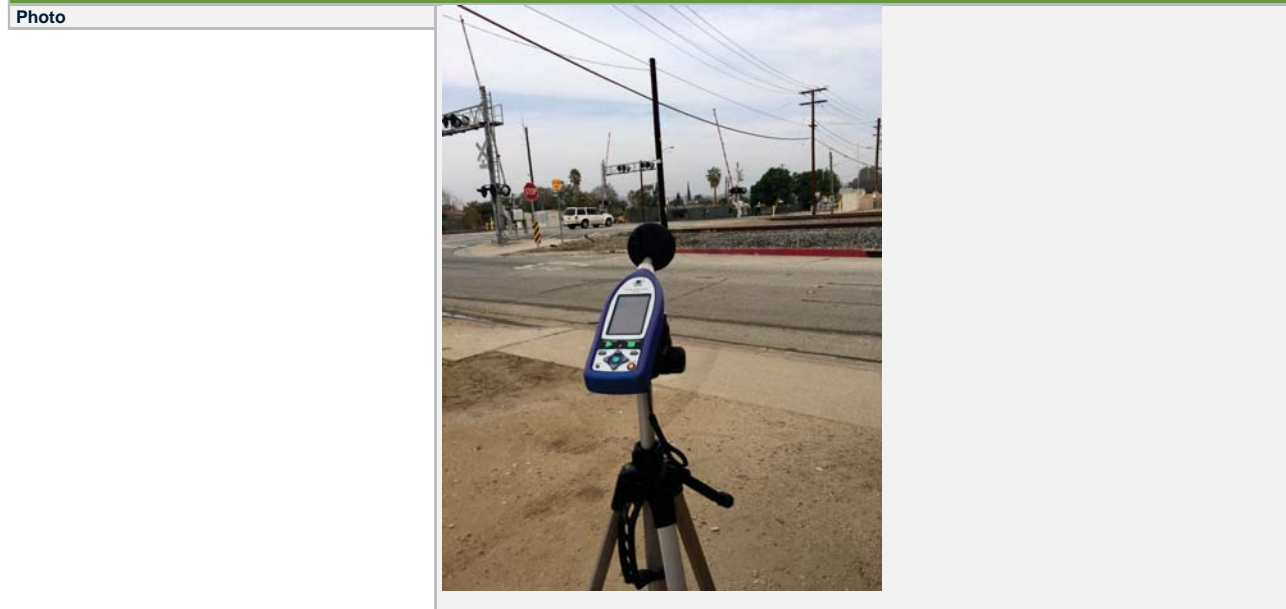
Recordings

|  |  |
|--|--|
| <b>Record #</b>  | 4  |
| <b>Site ID</b>   | M1   |
| <b>Site Location</b>   | Latitude:34.059071,<br>Longitude:-117.763198,<br>Altitude:242.020081,<br>Speed:0.280000,<br>Horizontal Accuracy:30.000000,<br>Vertical Accuracy:12.000000,<br>Time:10:14:50 AM PST |
| <b>Begin (Time)</b>  | 10:15:00   |
| <b>End (Time)</b>  | 10:25:00   |
| <b>Leq</b>   | 69.8   |
| <b>Lmax</b>  | 86   |
| <b>Lmin</b>  | 46   |
| <b>Other Lx?</b>   | L90, L50, L10  |
| <b>L90</b>   | 50.1   |
| <b>L50</b>   | 64.5   |
| <b>L10</b>   | 72.3   |
| <b>Primary Noise Source</b>  | Traffic  |
| <b>Other Noise Sources (Background)</b>  | Distant Aircraft, Distant Conversations / Yelling, Distant Dog Barking, Distant Industrial, Distant Traffic, Rustling Leaves   |
| <b>Other Noise Sources Additional Description</b>                              | Rail noise.  |
| <b>Is the same instrument and calibrator being used as previously notated?</b> | Yes  |
| <b>Are the meteorological conditions the same as previously notated?</b>       | Yes  |

| Recordings  |   |
|---|---|
| Record #  | 5   |
| Site ID   | M3  |
| Site Location   | Latitude:34.058311,<br>Longitude:-117.762874,<br>Altitude:249.213684,<br>Speed:0.000000,<br>Horizontal Accuracy:5.000000,<br>Vertical Accuracy:12.000000,<br>Time:10:27:49 AM PST |
| Begin (Time)  | 10:27:00  |
| End (Time)  | 10:37:00  |
| Leq   | 58.8  |
| Lmax  | 68.6  |
| Lmin  | 47.7  |
| Other Lx?   | L90, L50, L10   |
| L90   | 50.8  |
| L50   | 56.8  |
| L10   | 62.2  |
| Other (Specify Metric)  |   |
| Primary Noise Source  | Traffic   |
| Other Noise Sources (Background)  | Distant Conversations / Yelling, Distant Industrial, Distant Traffic  |
| Other Noise Sources Additional Description                              | Forklift. Ice machine on receivers property.  |
| Is the same instrument and calibrator being used as previously notated? | Yes   |
| Are the meteorological conditions the same as previously notated?       | Yes   |

Description / Photos

Site Photos





# Construction Noise Analysis Runs

Roadway Construction Noise Model (RCNM),Version 1.1

Report date 12/1/2016

Case Descr Architectural Coating\_Annex

---- Receptor #1 ----

| Descriptor Land Use     | Baselines (dBA) |         |       |
|-------------------------|-----------------|---------|-------|
|                         | Daytime         | Evening | Night |
| Residence - Residential | 65              | 60      | 55    |

| Description      | Equipment     |          |                 |                   |                          |                           |
|------------------|---------------|----------|-----------------|-------------------|--------------------------|---------------------------|
|                  | Impact Device | Usage(%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
| Compressor (air) | No            | 40       |                 | 77.7              | 50                       | 0                         |
| Pickup Truck     | No            | 40       |                 | 75                | 50                       | 0                         |

Results

| Equipment        | Calculated (dBA) |      | Noise Limits (dBA) |         |              |             |
|------------------|------------------|------|--------------------|---------|--------------|-------------|
|                  | *Lmax            | Leq  | Day Lmax           | Day Leq | Evening Lmax | Evening Leq |
| Compressor (air) | 77.7             | 73.7 | N/A                | N/A     | N/A          | N/A         |
| Pickup Truck     | 75               | 71   | N/A                | N/A     | N/A          | N/A         |
| Total            | 77.7             | 75.6 | N/A                | N/A     | N/A          | N/A         |

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

| Descriptor Land Use     | Baselines (dBA) |         |       |
|-------------------------|-----------------|---------|-------|
|                         | Daytime         | Evening | Night |
| Residence - Residential | 65              | 60      | 55    |

| Description      | Equipment     |          |                 |                   |                          |                           |
|------------------|---------------|----------|-----------------|-------------------|--------------------------|---------------------------|
|                  | Impact Device | Usage(%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
| Compressor (air) | No            | 40       |                 | 77.7              | 200                      | 0                         |
| Pickup Truck     | No            | 40       |                 | 75                | 200                      | 0                         |

Results

| Equipment        | Calculated (dBA) |      | Noise Limits (dBA) |         |              |             |
|------------------|------------------|------|--------------------|---------|--------------|-------------|
|                  | *Lmax            | Leq  | Day Lmax           | Day Leq | Evening Lmax | Evening Leq |
| Compressor (air) | 65.6             | 61.6 | N/A                | N/A     | N/A          | N/A         |
| Pickup Truck     | 63               | 59   | N/A                | N/A     | N/A          | N/A         |
| Total            | 66.8             | 66.2 | N/A                | N/A     | N/A          | N/A         |

\*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date 12/1/2016

Case Descr Building\_Const\_Annex

---- Receptor #1 ----

| Descriptor Land Use     | Baselines (dBA) |         |       |
|-------------------------|-----------------|---------|-------|
|                         | Daytime         | Evening | Night |
| Residence - Residential | 65              | 60      | 55    |

| Description    | Impact Device | Usage(%) | Equipment       |                   |                          |                           |
|----------------|---------------|----------|-----------------|-------------------|--------------------------|---------------------------|
|                |               |          | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
| Welder / Torch | No            | 40       |                 | 74                | 50                       | 0                         |
| Welder / Torch | No            | 40       |                 | 74                | 75                       | 0                         |
| Welder / Torch | No            | 40       |                 | 74                | 100                      | 0                         |
| Man Lift       | No            | 20       |                 | 74.7              | 50                       | 0                         |
| Crane          | No            | 16       |                 | 80.6              | 50                       | 0                         |
| Generator      | No            | 50       |                 | 80.6              | 75                       | 0                         |

Results

| Equipment      | Calculated (dBA) |      | Noise Limits (dBA) |         |              |             |
|----------------|------------------|------|--------------------|---------|--------------|-------------|
|                | *Lmax            | Leq  | Day Lmax           | Day Leq | Evening Lmax | Evening Leq |
| Welder / Torch | 74               | 70   | N/A                | N/A     | N/A          | N/A         |
| Welder / Torch | 70.5             | 66.5 | N/A                | N/A     | N/A          | N/A         |
| Welder / Torch | 68               | 64   | N/A                | N/A     | N/A          | N/A         |
| Man Lift       | 74.7             | 67.7 | N/A                | N/A     | N/A          | N/A         |
| Crane          | 80.6             | 72.6 | N/A                | N/A     | N/A          | N/A         |
| Generator      | 77.1             | 74.1 | N/A                | N/A     | N/A          | N/A         |
| Total          | 80.6             | 78.2 | N/A                | N/A     | N/A          | N/A         |

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

| Descriptor Land Use     | Baselines (dBA) |         |       |
|-------------------------|-----------------|---------|-------|
|                         | Daytime         | Evening | Night |
| Residence - Residential | 65              | 60      | 55    |

| Description    | Impact Device | Usage(%) | Equipment       |                   |                          |                           |
|----------------|---------------|----------|-----------------|-------------------|--------------------------|---------------------------|
|                |               |          | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
| Welder / Torch | No            | 40       |                 | 74                | 200                      | 0                         |
| Welder / Torch | No            | 40       |                 | 74                | 200                      | 0                         |
| Welder / Torch | No            | 40       |                 | 74                | 200                      | 0                         |
| Man Lift       | No            | 20       |                 | 74.7              | 200                      | 0                         |

|           |    |    |      |     |   |
|-----------|----|----|------|-----|---|
| Crane     | No | 16 | 80.6 | 200 | 0 |
| Generator | No | 50 | 80.6 | 200 | 0 |

Results

| Equipment      | Calculated (dBA) |      | Noise Limits (dBA) |     |         |     |
|----------------|------------------|------|--------------------|-----|---------|-----|
|                | *Lmax            | Leq  | Day                |     | Evening |     |
|                |                  |      | Lmax               | Leq | Lmax    | Leq |
| Welder / Torch | 62               | 58   | N/A                | N/A | N/A     | N/A |
| Welder / Torch | 62               | 58   | N/A                | N/A | N/A     | N/A |
| Welder / Torch | 62               | 58   | N/A                | N/A | N/A     | N/A |
| Man Lift       | 62.7             | 55.7 | N/A                | N/A | N/A     | N/A |
| Crane          | 68.5             | 60.6 | N/A                | N/A | N/A     | N/A |
| Generator      | 68.6             | 65.6 | N/A                | N/A | N/A     | N/A |
| Total          | 68.6             | 68.5 | N/A                | N/A | N/A     | N/A |

\*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date 12/1/2016  
Case Descr Grading\_Annex

---- Receptor #1 ----

| Baselines (dBA) |             | Daytime |    | Evening |    | Night |  |
|-----------------|-------------|---------|----|---------|----|-------|--|
| Description     | Land Use    |         |    |         |    |       |  |
| Residence       | Residential | 65      | 60 | 60      | 55 |       |  |

| Equipment   |        | Spec     |            | Actual     |            | Receptor        |                 | Estimated |   |
|-------------|--------|----------|------------|------------|------------|-----------------|-----------------|-----------|---|
| Description | Device | Usage(%) | Lmax (dBA) | Lmax (dBA) | Lmax (dBA) | Distance (feet) | Shielding (dBA) |           |   |
| Backhoe     | No     | 40       |            | 77.6       |            | 50              |                 |           | 0 |
| Grader      | No     | 40       | 85         |            |            | 60              |                 |           | 0 |
| Dozer       | No     | 40       |            | 81.7       |            | 75              |                 |           | 0 |

Results

| Calculated (dBA) |       | Day  |      | Evening |      |     |
|------------------|-------|------|------|---------|------|-----|
| Equipment        | *Lmax | Leq  | Lmax | Leq     | Lmax | Leq |
| Backhoe          | 77.6  | 73.6 | N/A  | N/A     | N/A  | N/A |
| Grader           | 83.4  | 79.4 | N/A  | N/A     | N/A  | N/A |
| Dozer            | 78.1  | 74.2 | N/A  | N/A     | N/A  | N/A |
| Total            | 83.4  | 81.4 | N/A  | N/A     | N/A  | N/A |

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

| Baselines (dBA) |             | Daytime |    | Evening |    | Night |  |
|-----------------|-------------|---------|----|---------|----|-------|--|
| Description     | Land Use    |         |    |         |    |       |  |
| Residence       | Residential | 65      | 60 | 60      | 55 |       |  |

| Equipment   |        | Spec     |            | Actual     |            | Receptor        |                 | Estimated |   |
|-------------|--------|----------|------------|------------|------------|-----------------|-----------------|-----------|---|
| Description | Device | Usage(%) | Lmax (dBA) | Lmax (dBA) | Lmax (dBA) | Distance (feet) | Shielding (dBA) |           |   |
| Backhoe     | No     | 40       |            | 77.6       |            | 200             |                 |           | 0 |
| Grader      | No     | 40       | 85         |            |            | 200             |                 |           | 0 |
| Dozer       | No     | 40       |            | 81.7       |            | 200             |                 |           | 0 |

Results

| Calculated (dBA) |       | Day  |      | Evening |      |     |
|------------------|-------|------|------|---------|------|-----|
| Equipment        | *Lmax | Leq  | Lmax | Leq     | Lmax | Leq |
| Backhoe          | 65.5  | 61.5 | N/A  | N/A     | N/A  | N/A |
| Grader           | 73    | 69   | N/A  | N/A     | N/A  | N/A |

|       |       |      |      |     |     |     |     |
|-------|-------|------|------|-----|-----|-----|-----|
| Dozer |       | 69.6 | 65.6 | N/A | N/A | N/A | N/A |
|       | Total | 73   | 71.1 | N/A | N/A | N/A | N/A |

\*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date 12/1/2016  
Case Descr Paving\_Annex

---- Receptor #1 ----

| Description Land Use    | Baselines (dBA) |         |       |
|-------------------------|-----------------|---------|-------|
|                         | Daytime         | Evening | Night |
| Residence - Residential | 65              | 60      | 55    |

| Description                | Impact Device | Usage(%) | Equipment       |                   |                          |                           |
|----------------------------|---------------|----------|-----------------|-------------------|--------------------------|---------------------------|
|                            |               |          | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
| Concrete Mixer Truck       | No            | 40       |                 | 78.8              | 50                       | 0                         |
| Paver                      | No            | 50       |                 | 77.2              | 75                       | 0                         |
| All Other Equipment > 5 HP | No            | 50       | 85              |                   | 100                      | 0                         |
| Roller                     | No            | 20       |                 | 80                | 50                       | 0                         |
| Crane                      | No            | 16       |                 | 80.6              | 50                       | 0                         |
| Front End Loader           | No            | 40       |                 | 79.1              | 75                       | 0                         |

Results

| Equipment                  | Calculated (dBA) |      | Noise Limits (dBA) |         |              |             |
|----------------------------|------------------|------|--------------------|---------|--------------|-------------|
|                            | *Lmax            | Leq  | Day Lmax           | Day Leq | Evening Lmax | Evening Leq |
| Concrete Mixer Truck       | 78.8             | 74.8 | N/A                | N/A     | N/A          | N/A         |
| Paver                      | 73.7             | 70.7 | N/A                | N/A     | N/A          | N/A         |
| All Other Equipment > 5 HP | 79               | 76   | N/A                | N/A     | N/A          | N/A         |
| Roller                     | 80               | 73   | N/A                | N/A     | N/A          | N/A         |
| Crane                      | 80.6             | 72.6 | N/A                | N/A     | N/A          | N/A         |
| Front End Loader           | 75.6             | 71.6 | N/A                | N/A     | N/A          | N/A         |
| Total                      | 80.6             | 81.3 | N/A                | N/A     | N/A          | N/A         |

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

| Description Land Use    | Baselines (dBA) |         |       |
|-------------------------|-----------------|---------|-------|
|                         | Daytime         | Evening | Night |
| Residence - Residential | 65              | 60      | 55    |

| Description                | Impact Device | Usage(%) | Equipment       |                   |                          |                           |
|----------------------------|---------------|----------|-----------------|-------------------|--------------------------|---------------------------|
|                            |               |          | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
| Concrete Mixer Truck       | No            | 40       |                 | 78.8              | 200                      | 0                         |
| Paver                      | No            | 50       |                 | 77.2              | 200                      | 0                         |
| All Other Equipment > 5 HP | No            | 50       | 85              |                   | 200                      | 0                         |
| Roller                     | No            | 20       |                 | 80                | 200                      | 0                         |

|                  |    |    |      |     |   |
|------------------|----|----|------|-----|---|
| Crane            | No | 16 | 80.6 | 200 | 0 |
| Front End Loader | No | 40 | 79.1 | 200 | 0 |

Results

| Equipment                  | Calculated (dBA) |      | Noise Limits (dBA) |     |         |     |
|----------------------------|------------------|------|--------------------|-----|---------|-----|
|                            | *Lmax            | Leq  | Day                |     | Evening |     |
|                            |                  |      | Lmax               | Leq | Lmax    | Leq |
| Concrete Mixer Truck       | 62               | 58   | N/A                | N/A | N/A     | N/A |
| Paver                      | 62               | 58   | N/A                | N/A | N/A     | N/A |
| All Other Equipment > 5 HP | 62               | 58   | N/A                | N/A | N/A     | N/A |
| Roller                     | 62.7             | 55.7 | N/A                | N/A | N/A     | N/A |
| Crane                      | 68.5             | 60.6 | N/A                | N/A | N/A     | N/A |
| Front End Loader           | 68.6             | 65.6 | N/A                | N/A | N/A     | N/A |
| Total                      | 68.6             | 68.5 | N/A                | N/A | N/A     | N/A |

\*Calculated Lmax is the Loudest value.



Roadway Construction Noise Model (RCNM),Version 1.1

Report date 12/1/2016

Case Descr Site Preparation Annex Phase

---- Receptor #1 ----

| Description Land Use    | Baselines (dBA) |         |       |
|-------------------------|-----------------|---------|-------|
|                         | Daytime         | Evening | Night |
| Residence - Residential | 65              | 60      | 55    |

| Description | Impact Device | Usage(%) | Equipment       |                   |                          |                           |
|-------------|---------------|----------|-----------------|-------------------|--------------------------|---------------------------|
|             |               |          | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
| Backhoe     | No            | 40       |                 | 77.6              | 50                       | 0                         |
| Grader      | No            | 40       | 85              |                   | 60                       | 0                         |
| Dozer       | No            | 40       |                 | 81.7              | 75                       | 0                         |

Results

| Equipment | Calculated (dBA) |      | Noise Limits (dBA) |     |         |     |
|-----------|------------------|------|--------------------|-----|---------|-----|
|           | *Lmax            | Leq  | Day                |     | Evening |     |
|           |                  |      | Lmax               | Leq | Lmax    | Leq |
| Backhoe   | 77.6             | 73.6 | N/A                | N/A | N/A     | N/A |
| Grader    | 83.4             | 79.4 | N/A                | N/A | N/A     | N/A |
| Dozer     | 78.1             | 74.2 | N/A                | N/A | N/A     | N/A |
| Total     | 83.4             | 81.4 | N/A                | N/A | N/A     | N/A |

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

| Description Land Use    | Baselines (dBA) |         |       |
|-------------------------|-----------------|---------|-------|
|                         | Daytime         | Evening | Night |
| Residence - Residential | 65              | 60      | 55    |

| Description | Impact Device | Usage(%) | Equipment       |                   |                          |                           |
|-------------|---------------|----------|-----------------|-------------------|--------------------------|---------------------------|
|             |               |          | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
| Backhoe     | No            | 40       |                 | 77.6              | 200                      | 0                         |
| Grader      | No            | 40       | 85              |                   | 200                      | 0                         |
| Dozer       | No            | 40       |                 | 81.7              | 200                      | 0                         |

Results

| Equipment | Calculated (dBA) |      | Noise Limits (dBA) |     |         |     |
|-----------|------------------|------|--------------------|-----|---------|-----|
|           | *Lmax            | Leq  | Day                |     | Evening |     |
|           |                  |      | Lmax               | Leq | Lmax    | Leq |
| Backhoe   | 65.5             | 61.5 | N/A                | N/A | N/A     | N/A |
| Grader    | 73               | 69   | N/A                | N/A | N/A     | N/A |

|       |       |      |      |     |     |     |     |
|-------|-------|------|------|-----|-----|-----|-----|
| Dozer |       | 69.6 | 65.6 | N/A | N/A | N/A | N/A |
|       | Total | 73   | 71.1 | N/A | N/A | N/A | N/A |

\*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date 12/1/2016

Case Descr Architectural Coating\_ Water Yard / Sewer Lot

---- Receptor #1 ----

| Descriptor Land Use     | Baselines (dBA) |         |       |
|-------------------------|-----------------|---------|-------|
|                         | Daytime         | Evening | Night |
| Residence - Residential | 65              | 60      | 55    |

| Description      | Equipment     |          |                 |                   |                          |                           |
|------------------|---------------|----------|-----------------|-------------------|--------------------------|---------------------------|
|                  | Impact Device | Usage(%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
| Compressor (air) | No            | 40       |                 | 77.7              | 50                       | 0                         |
| Pickup Truck     | No            | 40       |                 | 75                | 50                       | 0                         |

Results

| Equipment        | Calculated (dBA) |      | Noise Limits (dBA) |     |              |     |
|------------------|------------------|------|--------------------|-----|--------------|-----|
|                  | *Lmax            | Leq  | Day Lmax           | Leq | Evening Lmax | Leq |
| Compressor (air) | 77.7             | 73.7 | N/A                | N/A | N/A          | N/A |
| Pickup Truck     | 75               | 71   | N/A                | N/A | N/A          | N/A |
| Total            | 77.7             | 75.6 | N/A                | N/A | N/A          | N/A |

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

| Descriptor Land Use     | Baselines (dBA) |         |       |
|-------------------------|-----------------|---------|-------|
|                         | Daytime         | Evening | Night |
| Residence - Residential | 65              | 60      | 55    |

| Description      | Equipment     |          |                 |                   |                          |                           |
|------------------|---------------|----------|-----------------|-------------------|--------------------------|---------------------------|
|                  | Impact Device | Usage(%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
| Compressor (air) | No            | 40       |                 | 77.7              | 200                      | 0                         |
| Pickup Truck     | No            | 40       |                 | 75                | 200                      | 0                         |

Results

| Equipment        | Calculated (dBA) |      | Noise Limits (dBA) |     |              |     |
|------------------|------------------|------|--------------------|-----|--------------|-----|
|                  | *Lmax            | Leq  | Day Lmax           | Leq | Evening Lmax | Leq |
| Compressor (air) | 65.6             | 61.6 | N/A                | N/A | N/A          | N/A |
| Pickup Truck     | 63               | 59   | N/A                | N/A | N/A          | N/A |
| Total            | 66.8             | 66.2 | N/A                | N/A | N/A          | N/A |

\*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date 12/1/2016

Case Descr Building\_Const\_Annex

---- Receptor #1 ----

| Descriptor Land Use     | Baselines (dBA) |         |       |
|-------------------------|-----------------|---------|-------|
|                         | Daytime         | Evening | Night |
| Residence - Residential | 65              | 60      | 55    |

| Description    | Impact Device | Usage(%) | Equipment       |                   |                          |                           |
|----------------|---------------|----------|-----------------|-------------------|--------------------------|---------------------------|
|                |               |          | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
| Welder / Torch | No            | 40       |                 | 74                | 50                       | 0                         |
| Welder / Torch | No            | 40       |                 | 74                | 75                       | 0                         |
| Welder / Torch | No            | 40       |                 | 74                | 100                      | 0                         |
| Man Lift       | No            | 20       |                 | 74.7              | 50                       | 0                         |
| Man Lift       | No            | 20       |                 | 74.7              | 50                       | 0                         |
| Crane          | No            | 16       |                 | 80.6              | 75                       | 0                         |
| Generator      | No            | 50       |                 | 80.6              | 75                       | 0                         |
| Backhoe        | No            | 40       |                 | 77.6              | 75                       | 0                         |

Results

| Equipment      | Calculated (dBA) |      | Noise Limits (dBA) |     |              |     |
|----------------|------------------|------|--------------------|-----|--------------|-----|
|                | *Lmax            | Leq  | Day Lmax           | Leq | Evening Lmax | Leq |
| Welder / Torch | 74               |      | N/A                | N/A | N/A          | N/A |
| Welder / Torch | 70.5             | 66.5 | N/A                | N/A | N/A          | N/A |
| Welder / Torch | 68               | 64   | N/A                | N/A | N/A          | N/A |
| Man Lift       | 74.7             | 67.7 | N/A                | N/A | N/A          | N/A |
| Man Lift       | 74.7             | 67.7 | N/A                | N/A | N/A          | N/A |
| Crane          | 77               | 69.1 | N/A                | N/A | N/A          | N/A |
| Generator      | 77.1             | 74.1 | N/A                | N/A | N/A          | N/A |
| Backhoe        | 74               | 70.1 | N/A                | N/A | N/A          | N/A |
| Total          | 77.1             | 78.6 | N/A                | N/A | N/A          | N/A |

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

| Descriptor Land Use     | Baselines (dBA) |         |       |
|-------------------------|-----------------|---------|-------|
|                         | Daytime         | Evening | Night |
| Residence - Residential | 65              | 60      | 55    |

| Description | Impact Device | Usage(%) | Equipment       |                   |                          |                           |
|-------------|---------------|----------|-----------------|-------------------|--------------------------|---------------------------|
|             |               |          | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |

|                |    |    |      |     |   |
|----------------|----|----|------|-----|---|
| Welder / Torch | No | 40 | 74   | 200 | 0 |
| Welder / Torch | No | 40 | 74   | 200 | 0 |
| Welder / Torch | No | 40 | 74   | 200 | 0 |
| Man Lift       | No | 20 | 74.7 | 200 | 0 |
| Man Lift       | No | 20 | 74.7 | 200 | 0 |
| Crane          | No | 16 | 80.6 | 200 | 0 |
| Generator      | No | 50 | 80.6 | 200 | 0 |
| Backhoe        | No | 40 | 77.6 | 200 | 0 |

Results

| Equipment      | Calculated (dBA) |      | Noise Limits (dBA) |     |         |     |
|----------------|------------------|------|--------------------|-----|---------|-----|
|                | *Lmax            | Leq  | Day                |     | Evening |     |
|                |                  |      | Lmax               | Leq | Lmax    | Leq |
| Welder / Torch | 62               | 58   | N/A                | N/A | N/A     | N/A |
| Welder / Torch | 62               | 58   | N/A                | N/A | N/A     | N/A |
| Welder / Torch | 62               | 58   | N/A                | N/A | N/A     | N/A |
| Man Lift       | 62.7             | 55.7 | N/A                | N/A | N/A     | N/A |
| Man Lift       | 62.7             | 55.7 | N/A                | N/A | N/A     | N/A |
| Crane          | 68.5             | 60.6 | N/A                | N/A | N/A     | N/A |
| Generator      | 68.6             | 65.6 | N/A                | N/A | N/A     | N/A |
| Backhoe        | 65.5             | 61.5 | N/A                | N/A | N/A     | N/A |
| Total          | 68.6             | 69.4 | N/A                | N/A | N/A     | N/A |

\*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date 12/1/2016

Case Descr Grading\_Water Yard / Sewer Lot

---- Receptor #1 ----

| Description Land Use    | Baselines (dBA) |         |       |
|-------------------------|-----------------|---------|-------|
|                         | Daytime         | Evening | Night |
| Residence - Residential | 65              | 60      | 55    |

| Description      | Impact Device | Usage(%) | Equipment       |                   | Receptor Distance (feet) | Estimated Shielding (dBA) |
|------------------|---------------|----------|-----------------|-------------------|--------------------------|---------------------------|
|                  |               |          | Spec Lmax (dBA) | Actual Lmax (dBA) |                          |                           |
| Tractor          | No            | 40       | 84              |                   | 50                       | 0                         |
| Front End Loader | No            | 40       |                 | 79.1              | 60                       | 0                         |
| Grader           | No            | 40       | 85              |                   | 75                       | 0                         |
| Dozer            | No            | 40       |                 | 81.7              | 50                       | 0                         |

Results

| Equipment        | Calculated (dBA) |      | Noise Limits (dBA) |     |         |     |
|------------------|------------------|------|--------------------|-----|---------|-----|
|                  | *Lmax            | Leq  | Day                |     | Evening |     |
|                  |                  |      | Lmax               | Leq | Lmax    | Leq |
| Tractor          | 84               | 80   | N/A                | N/A | N/A     | N/A |
| Front End Loader | 77.5             | 73.5 | N/A                | N/A | N/A     | N/A |
| Grader           | 81.5             | 77.5 | N/A                | N/A | N/A     | N/A |
| Dozer            | 81.7             | 77.7 | N/A                | N/A | N/A     | N/A |
| Total            | 84               | 83.8 | N/A                | N/A | N/A     | N/A |

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

| Description Land Use    | Baselines (dBA) |         |       |
|-------------------------|-----------------|---------|-------|
|                         | Daytime         | Evening | Night |
| Residence - Residential | 65              | 60      | 55    |

| Description      | Impact Device | Usage(%) | Equipment       |                   | Receptor Distance (feet) | Estimated Shielding (dBA) |
|------------------|---------------|----------|-----------------|-------------------|--------------------------|---------------------------|
|                  |               |          | Spec Lmax (dBA) | Actual Lmax (dBA) |                          |                           |
| Tractor          | No            | 40       | 84              |                   | 200                      | 0                         |
| Front End Loader | No            | 40       |                 | 79.1              | 200                      | 0                         |
| Grader           | No            | 40       | 85              |                   | 200                      | 0                         |
| Dozer            | No            | 40       |                 | 81.7              | 200                      | 0                         |

Results

| Equipment        | Calculated (dBA) |         | Noise Limits (dBA) |         |
|------------------|------------------|---------|--------------------|---------|
|                  | Day              | Evening | Day                | Evening |
| Tractor          | 84               | 80      | N/A                | N/A     |
| Front End Loader | 77.5             | 73.5    | N/A                | N/A     |
| Grader           | 81.5             | 77.5    | N/A                | N/A     |
| Dozer            | 81.7             | 77.7    | N/A                | N/A     |
| Total            | 84               | 83.8    | N/A                | N/A     |

| Equipment        | *Lmax | Leq  | Lmax | Leq | Lmax | Leq |
|------------------|-------|------|------|-----|------|-----|
| Tractor          | 72    | 68   | N/A  | N/A | N/A  | N/A |
| Front End Loader | 67.1  | 63.1 | N/A  | N/A | N/A  | N/A |
| Grader           | 73    | 69   | N/A  | N/A | N/A  | N/A |
| Dozer            | 69.6  | 65.6 | N/A  | N/A | N/A  | N/A |
| Total            | 73    | 73   | N/A  | N/A | N/A  | N/A |

\*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date 12/1/2016

Case Descr Paving\_Water Yard / Sewer Lot

---- Receptor #1 ----

| Baselines (dBA)         |         |         |       |  |  |  |
|-------------------------|---------|---------|-------|--|--|--|
| Description Land Use    | Daytime | Evening | Night |  |  |  |
| Residence - Residential | 65      | 60      | 55    |  |  |  |

| Equipment                  |               |          |            |            |                 |                 |
|----------------------------|---------------|----------|------------|------------|-----------------|-----------------|
| Description                | Impact Device | Usage(%) | Spec       | Actual     | Receptor        | Estimated       |
|                            |               |          | Lmax (dBA) | Lmax (dBA) | Distance (feet) | Shielding (dBA) |
| Concrete Mixer Truck       | No            | 40       |            | 78.8       | 50              | 0               |
| Paver                      | No            | 50       |            | 77.2       | 75              | 0               |
| All Other Equipment > 5 HP | No            | 50       | 85         |            | 100             | 0               |
| Roller                     | No            | 20       |            | 80         | 50              | 0               |
| Roller                     | No            | 20       |            | 80         | 50              | 0               |
| Front End Loader           | No            | 40       |            | 79.1       | 75              | 0               |

Results

| Equipment                  | Calculated (dBA) |      |      | Noise Limits (dBA) |      |     |  |
|----------------------------|------------------|------|------|--------------------|------|-----|--|
|                            | *Lmax            | Leq  | Day  | Evening            |      |     |  |
|                            |                  |      | Lmax | Leq                | Lmax | Leq |  |
| Concrete Mixer Truck       | 78.8             | 74.8 | N/A  | N/A                | N/A  | N/A |  |
| Paver                      | 73.7             | 70.7 | N/A  | N/A                | N/A  | N/A |  |
| All Other Equipment > 5 HP | 79               | 76   | N/A  | N/A                | N/A  | N/A |  |
| Roller                     | 80               | 73   | N/A  | N/A                | N/A  | N/A |  |
| Roller                     | 80               | 73   | N/A  | N/A                | N/A  | N/A |  |
| Front End Loader           | 75.6             | 71.6 | N/A  | N/A                | N/A  | N/A |  |
| Total                      | 80               | 81.3 | N/A  | N/A                | N/A  | N/A |  |

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

| Baselines (dBA)         |         |         |       |  |  |  |
|-------------------------|---------|---------|-------|--|--|--|
| Description Land Use    | Daytime | Evening | Night |  |  |  |
| Residence - Residential | 65      | 60      | 55    |  |  |  |

| Equipment                  |               |          |            |            |                 |                 |
|----------------------------|---------------|----------|------------|------------|-----------------|-----------------|
| Description                | Impact Device | Usage(%) | Spec       | Actual     | Receptor        | Estimated       |
|                            |               |          | Lmax (dBA) | Lmax (dBA) | Distance (feet) | Shielding (dBA) |
| Concrete Mixer Truck       | No            | 40       |            | 78.8       | 200             | 0               |
| Paver                      | No            | 50       |            | 77.2       | 200             | 0               |
| All Other Equipment > 5 HP | No            | 50       | 85         |            | 200             | 0               |
| Roller                     | No            | 20       |            | 80         | 200             | 0               |



|                  |    |    |      |     |   |
|------------------|----|----|------|-----|---|
| Roller           | No | 20 | 80   | 200 | 0 |
| Front End Loader | No | 40 | 79.1 | 200 | 0 |

Results

| Equipment                  | Calculated (dBA) |      | Noise Limits (dBA) |     |         |     |
|----------------------------|------------------|------|--------------------|-----|---------|-----|
|                            | *Lmax            | Leq  | Day                |     | Evening |     |
|                            |                  |      | Lmax               | Leq | Lmax    | Leq |
| Concrete Mixer Truck       | 66.8             | 62.8 | N/A                | N/A | N/A     | N/A |
| Paver                      | 65.2             | 62.2 | N/A                | N/A | N/A     | N/A |
| All Other Equipment > 5 HP | 73               | 69.9 | N/A                | N/A | N/A     | N/A |
| Roller                     | 68               | 61   | N/A                | N/A | N/A     | N/A |
| Roller                     | 68.5             | 60.6 | N/A                | N/A | N/A     | N/A |
| Front End Loader           | 67.1             | 63.1 | N/A                | N/A | N/A     | N/A |
| Total                      | 73               | 72.5 | N/A                | N/A | N/A     | N/A |

\*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date 12/1/2016

Case Descr Site Preparation Water Yard / Sewer Lot

---- Receptor #1 ----

| Description Land Use    | Baselines (dBA) |         |       |
|-------------------------|-----------------|---------|-------|
|                         | Daytime         | Evening | Night |
| Residence - Residential | 65              | 60      | 55    |

| Description | Impact Device | Usage(%) | Equipment       |                   |                          |                           |
|-------------|---------------|----------|-----------------|-------------------|--------------------------|---------------------------|
|             |               |          | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
| Backhoe     | No            | 40       |                 | 77.6              | 50                       | 0                         |
| Grader      | No            | 40       | 85              |                   | 60                       | 0                         |
| Scraper     | No            | 40       |                 | 83.6              | 75                       | 0                         |

Results

| Equipment | Calculated (dBA) |      | Noise Limits (dBA) |     |         |     |
|-----------|------------------|------|--------------------|-----|---------|-----|
|           | *Lmax            | Leq  | Day                |     | Evening |     |
|           |                  |      | Lmax               | Leq | Lmax    | Leq |
| Backhoe   | 77.6             | 73.6 | N/A                | N/A | N/A     | N/A |
| Grader    | 83.4             | 79.4 | N/A                | N/A | N/A     | N/A |
| Scraper   | 80.1             | 76.1 | N/A                | N/A | N/A     | N/A |
| Total     | 83.4             | 81.8 | N/A                | N/A | N/A     | N/A |

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

| Description Land Use    | Baselines (dBA) |         |       |
|-------------------------|-----------------|---------|-------|
|                         | Daytime         | Evening | Night |
| Residence - Residential | 65              | 60      | 55    |

| Description | Impact Device | Usage(%) | Equipment       |                   |                          |                           |
|-------------|---------------|----------|-----------------|-------------------|--------------------------|---------------------------|
|             |               |          | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
| Backhoe     | No            | 40       |                 | 77.6              | 200                      | 0                         |
| Grader      | No            | 40       | 85              |                   | 200                      | 0                         |
| Scraper     | No            | 40       |                 | 83.6              | 200                      | 0                         |

Results

| Equipment | Calculated (dBA) |      | Noise Limits (dBA) |     |         |     |
|-----------|------------------|------|--------------------|-----|---------|-----|
|           | *Lmax            | Leq  | Day                |     | Evening |     |
|           |                  |      | Lmax               | Leq | Lmax    | Leq |
| Backhoe   | 65.5             | 61.5 | N/A                | N/A | N/A     | N/A |
| Grader    | 73               | 69   | N/A                | N/A | N/A     | N/A |

|         |      |      |     |     |     |     |
|---------|------|------|-----|-----|-----|-----|
| Scraper | 71.5 | 67.6 | N/A | N/A | N/A | N/A |
| Total   | 73   | 71.8 | N/A | N/A | N/A | N/A |

\*Calculated Lmax is the Loudest value.

