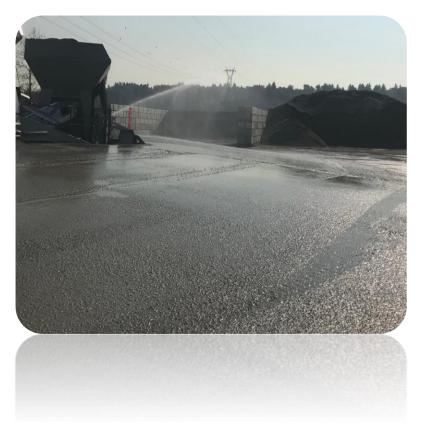
# **Fugitive Dust Management Action Plan**

For Metro Vancouver Staff Review Only



# ALL ROADS CONSTRUCTION LTD.

**Prepared by:**Envirochem Services Inc

**Prepared for:** All Roads Construction Ltd.

December 2020





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# 1 INTRODUCTION

All Roads Construction Ltd.

All Roads Construction Ltd. (All Roads) retained Envirochem Services Inc. (Envirochem) to review the operation of their Hot Mix Asphalt (HMA) plant located in Coquitlam B.C. for the preparation of a Fugitive Dust Management Action Plan (FDMAP) as part of the company's environmental management system, and to satisfy a requirement of their Metro Vancouver Air Quality Permit (GVU1184). This FDMAP provides an overview of site operations, fugitive dust emission sources, and actions completed to minimize fugitive dust emissions. This plan is based on information provided by All Roads, third parties and an assessment of overall site operations/site visits.

# 1.1 PURPOSE OF THE FUGITIVE DUST MANAGEMENT ACTION PLAN

The purpose of this Fugitive Dust Management Action Plan (FDMAP) is to identify the fugitive dust sources associated with All Roads' operations, and to outline the processes or controls that are, or will be put, in place to reduce emissions. The processes and practices laid out in this plan are designed to minimize dust emissions, protect the health & safety of workers on site, and limit any impacts on the receiving environment and local community.

# 1.2 SITE INFORMATION

### 1.2.1 LOCATION

All Roads is located in Coquitlam BC. The facility address is 2320 Rogers Avenue, Coquitlam, BC V3K 5X7. The coordinates are: 49.2227, -122.8275.

### 1.2.2 SITE BOUNDARY

An aerial image of All Roads' site is shown in **Figure 1** with the site boundary highlighted in red for reference.





Figure 1: Image of the All Roads Construction Ltd. Facility

# 1.2.3 SURROUNDING AREA

The surrounding area near the facility is mainly comprised of industrial lands and residential dwellings. The facility itself is bordered by other industrial sites and by the Fraser River on its south side. An aerial image of the site and surrounding area is shown in **Figure 2** for reference.





Figure 2: Image of All Roads Ltd. Facility and Surrounding Area



# 2 SOURCES OF FUGITIVE DUST

Fugitive dust sources at the All Roads site consists of material transfer operations, screening, and loading/unloading activities.

# 2.1 FUGITIVE SOURCE LIST

**Table 1** shows a list of the fugitive dust sources on-site and their corresponding identifiers as seen in air approval GVU1184. Please note this plan includes the management of dust generated from fugitive sources (please refer to approval GVU1184 for point source details). The locations of these sources are shown in **Figure 3** for reference.

This source list will be reviewed annually or as soon as any action items regarding fugitive dust are brought to management's attention. New sources of emissions or upgrades to existing control measures will be incorporated into the plan as they occur.

**Table 1: Fugitive Dust Source Summary** 

Identifier	Description		
E.S03	Aggregate transfer from barge to dump truck using front-end loader		
E.S04	Dumping aggregates from dump truck onto stockpile and stockpile emissions		
E.S05	S05 Aggregate loading onto front-end loader and transfer from stockpile to cold feed bins		
E.S06	Aggregate transfer from cold feed bins to conveyor belt		
E.S07	Aggregate transfer from collector conveyor to scalping screen		
E.S08	Aggregate scalping screen removing lumps and oversized material		
E.S09	S09 Aggregate transfer from scale conveyor to drum conveyor		
E.S10	Pre-crushed RAP delivered to site and dropped by dump truck onto stockpile, and stockpile emissions		
E.S11	RAP loading onto front-end loaders and transfer from stockpile to cold feed bins using front-end loader		
E.S12	RAP transfer from cold feed bins to conveyor		
E.S13	RAP transfer from collector conveyor to scalping screen		
E.S14	RAP scalping screen removing lumps and oversized material		
E.S15	RAP transfer from scale conveyor to drum conveyor		
E.S16	HMA Load-out to truck		



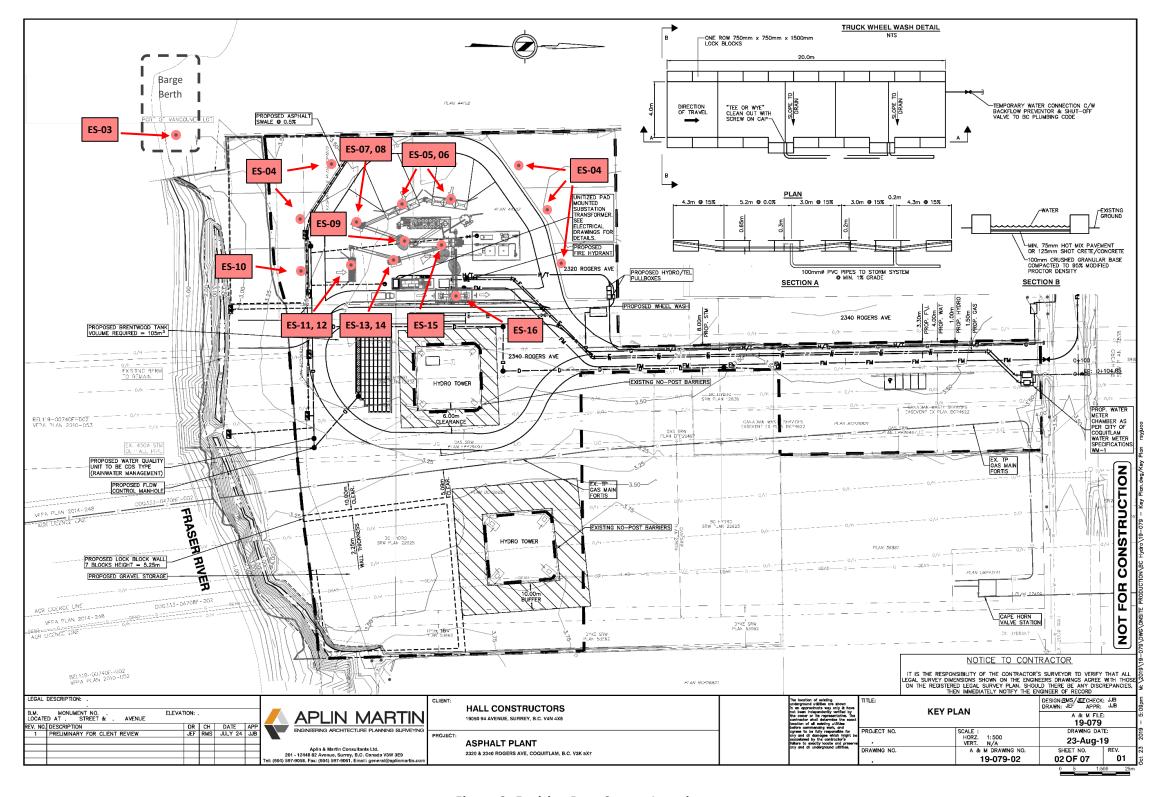


Figure 3: Fugitive Dust Source Locations



# 3 MITIGATION MEASURES BY ACTIVITY

Fugitive dust is reduced by various mitigation measures implemented throughout the site. By limiting each potential source of fugitive dust, fugitive dust from the facility as a whole is greatly reduced. The following sections outline the measures taken to minimize/reduce emissions from the fugitive dust sources on-site.

Based on an assessment of overall site operation and the controls in place, offsite dust issues are not expected. If it is determined that there is an on-going offsite dust issue, even with the mentioned control measures in-place, then additional controls will be investigated and implemented as required with approval from Metro Vancouver.

# 3.1 MITIGATION MEASURES FOR OPERATIONAL SOURCES

# 3.1.1 MATERIAL STORAGE/STOCKPILING CONTROLS

Material storage bins/stockpiles and related transfer activities have the potential to generate fugitive dust. By using a combination of containment measures and good operating practices, fugitive dust emissions at the All Roads site will be limited. Controls include but are not limited to enclosures and wet (water) suppression.

Material storage areas are enclosed on three sides to minimize fugitive dust generated from wind erosion and stockpiling. As an additional measure, canopies have been installed to cover areas dedicated to the storage of finer materials (e.g. RAP, sand, etc.), negating/minimizing wind effects and ensuring dust is contained.

During windy days, key parameters (wind speed, wind direction, apparent effect on stockpiles) will be assessed and stockpiling activities may be postponed until more favorable conditions are obtained.

Misters will be installed at/above the fine aggregate and RAP stockpiles to minimize fugitive dust generated from material storage areas/stockpiling activities.

# 3.1.2 MATERIAL TRANSFER/HANDLING CONTROLS

Fugitive dust generated from material transfer/handling operations at the All Roads facility is minimized by a combination of administrative controls and engineering controls. Controls include but are not limited to: wet (water) suppression, containment aids, and good operating practices.



Misters are installed at conveyor material transfer points to minimize fugitive dust generated from processing operations. Chutes attached to conveyor transfer points are also used to direct aggregate flow and to contain dust. As an additional measure, drop heights at material transfer points/locations are minimized as much as operationally possible.

# 3.2 MITIGATION MEASURES FOR EQUIPMENT

### 3.2.1 ROUTINE CLEANUP

The various areas that are identified for potential dust accumulation will be cleaned regularly to minimize the dust becoming airborne during operation. Lockout procedures are followed during dust cleanup operations to reduce the hazard/risks of injury.

Good operating practices are employed throughout the site. This includes, but is not limited to, prompt cleanup of any spills, dust cleaning methods that do not generate dust clouds, regular clean-up in all structures, and regular cleaning focusing on horizontal ledges and hidden areas.

# 3.3 MITIGATION MEASURES FOR ROAD DUST ON-SITE

### 3.3.1 DUST SUPPRESSION

Sprinklers have been installed on the roadways to minimize fugitive dust generated from material handling activities and off-road equipment (see **Figure 4** for reference). They are scheduled to operate on production days prior to plant start-up, and can be remotely activated on an as needed basis.





Figure 4: Sprinkler System

As necessary, watering/sweeping activities are completed on the paved/unpaved surfaces onsite to control road dust in the dry seasons. The application schedule is dependant on traffic flows and the daily/seasonal weather. Precipitation in spring and fall and freezing temperatures in the winter typically make water/sweeping activities unnecessary. During the late spring, summer, and early fall, application will be on an as-required basis depending on weather conditions. Watering/sweeping activities are completed using water trucks and industrial sweepers.



Figure 5: All Roads Water Truck



All Roads Construction Ltd.

### 3.3.2 DEBRIS AND DIRT REMOVAL

Normal operating practice includes removal of debris from access roads to make transport easier. This practice will continue with additional focus on dust control especially during drier periods.

### 3.3.3 SPEED LIMIT REDUCTION

Speed limits have been set to minimize dust generation throughout the site. This will limit fugitive dust production and improve safety measures.

# 3.4 MITIGATION MEASURES FOR ROAD DUST OFF-SITE

Dirt adhering to truck and cars have the potential to be transported offsite and onto the roads in the local community. The following control measures may be implemented to minimize the generation, frequency and/or intensity of this occurrence.

### 3.4.1 SITE ACCESS ROAD DUST CONTROL

To control potential dust caused by vehicles leaving the site, water suppression methods (e.g. sprinklers/water truck) are used. The affects of water suppression will be continually assessed and additional measures implemented as necessary.

# 3.4.2 VEHICLE WASH STATION

A vehicle wash station has been installed the All Roads site as a supplementary control. As required, washing is completed to minimize the transport of fugitive dust offsite. An image of the vehicle wash station is shown in **Figure 6** for reference.



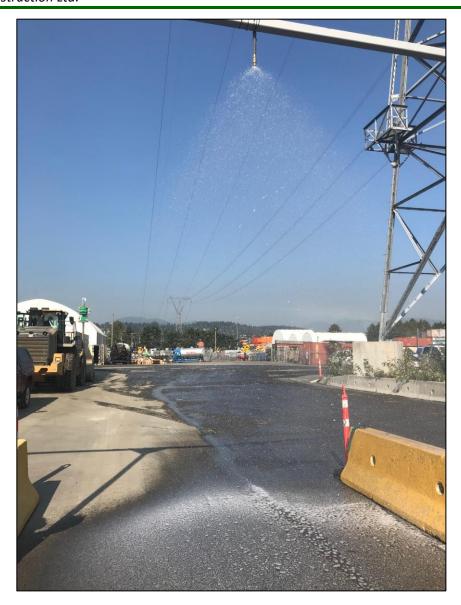


Figure 6: Vehicle Wash Station

# 3.4.3 TIRE WASHING

A tire wash station will be installed if deemed necessary.



# 4 IMPLEMENTATION

In order to most effectively implement this FDMAP, a site-wide comprehensive effort is required. This section highlights the items necessary for effective implementation of the plan at the All Roads facility.

# 4.1 INVESTIGATION AND DECISION MAKING

Some of the measures in this plan may require further investigation to determine root causes and/or develop appropriate mitigation strategies and options. Mitigation strategies/options are determined based on a review of effectiveness and cost. Should any future mitigation methods require a significant amount of time to setup, then temporary measures will be implemented for immediate fugitive dust control.

# 4.2 ROLES AND RESPONSIBILITIES

Responsibility for implementation and execution of this FDMAP is to be shared by ownership, management, shift supervisors and workers. While each group is responsible for different areas of the plan, they will support each other and provide assistance where necessary.

Ownership will champion worker health & safety at All Roads. Management will initiate, institute, maintain and monitor this FDMAP. The facility manager will be responsible for implementation of this plan and assigning specific duties to shift supervisors and workers as required. Shift supervisor's will be knowledgeable of the All Roads FDMAP and ensure workers under their supervision are performing their duties as required by the program. Workers will know and understand the All Roads FDMAP. This includes but is not limited to: practicing/encouraging good housekeeping, and reporting all dangerous or hazardous conditions, practices or behaviors.

### 4.3 TRAINING

The selected fugitive dust reduction methods are assigned to various responsible parties based on knowledge and proximity to the assigned area. All relevant (operational and/or health and safety) personnel will be trained to understand the site-wide fugitive dust mitigation measures implemented (such as possible change of day-to-day operations to accommodate reducing traffic and stockpile activities).



## 4.4 RECORD KEEPING AND REPORTING

Record keeping activities include (as applicable) a summary of incidents where additional mitigation efforts were employed, complaints received/actions taken to address complaints, and deficiencies identified in the FDMAP/corrective actions.

# 4.4.1 DUST EVENTS/SPILL RESPONSE

A regular maintenance schedule for potential sources of fugitive dust is implemented to minimize dust events (i.e. wind erosion from dust accumulation).

In addition, documentation of noticeable opacity will assist in determining the conditions and activities that may result in raised opacity levels.

Any material spills on site will be addressed promptly and cleared as soon as possible. Spills and site conditions will be assessed and dust control measures (e.g. additional watering) implemented as necessary. Site personnel are familiar with the dust management plan and sources on-site will be regularly checked. External opacity readers will be contacted as required.

Dust events/spills and other abnormal conditions/dust releases will be recorded in a Fugitive Dust Emission Monitoring Log. A sample Fugitive Dust Emission Monitoring Log is included in Appendix A for reference.

### 4.4.2 COMPLAINT TRACKING

A record of all fugitive dust related community complaints will be kept, along with actions taken to address them, and relevant operations and weather conditions at the time.

Complaints and other logged information will be reviewed on a regular basis (see **5 Adaptive Management Plan**) to ensure any root causes of fugitive dust emission are identified.

All Roads is committed to working with the neighboring community to track the impacts of their operations through their complaint handling procedure. The complaint handling procedure is included in Appendix B for reference.



# **5 ADAPTIVE MANAGEMENT PLAN**

Once finalized in its first iteration, review of this FDMAP will be completed on an annual basis to ensure that it continues to be effective and best practices are met. The adaptive management approach will track all relevant records and reports to make sure that trends are not missed. As more data becomes available, areas of improvement can be more effectively identified and addressed.

A designated review schedule and committee will ensure that review occurs, and the plan is updated to meet the current needs of All Roads.

By using an adaptive management approach, the plan can be changed and strengthened as more information becomes available. This will allow All Roads to best control fugitive dust emissions.



# **LIMITATIONS**

This Plan is intended for the use of All Roads Construction Ltd. and is provided solely for Metro Vancouver own review and comment. This plan is not for the benefit of any third party. As it contains information that is confidential and proprietary to All Roads, the disclosure of which to any third party can reasonably be expected to cause material damage or loss to All Roads, please treat the Plan as confidential and do not disclose it in whole or in part to any third party without the prior written consent of All Roads.

Some conditions are subject to change over time and those making use of the plan should be aware of this possibility and understand that the plan only presents the conditions at the time of writing.

Any third-party recipient of this plan or user of any content contained herein uses this plan and its contents at its sole risk. Envirochem has relied upon information provided by All Roads and/or third parties to compile this fugitive dust management action plan. Envirochem accepts no responsibility for any deficiency, misstatements or inaccuracy contained in this plan as a result of omissions, misstatements or fraudulent acts of persons interviewed.



# APPENDIX A: FUGITIVE DUST EMISSIONS MONITORING LOG



Fugitive Dust Emissions Monitoring Log						
Date/Time	Location	Fugitive Dust Source	Control Method Implemented	Comments		



# **APPENDIX B: COMPLAINT HANDLING SOP**



**Complaint Handling** 

# **STANDARD OPERATING PROCEDURE**

# **CONFIDENTIAL AND PROTECTED**

TITLE
Complaint Handling

**RELEASE DATE** 2020/12/14

**EFFECTIVE DATE** 2020/12/14

# Prepared by:

Envirochem Services Inc. #206 - 267 Esplanade West North Vancouver, BC V7M 1A5 www.envirochem.com

**Complaint Handling** 

# 1 PURPOSE

**1.1** Define the process of handling external complaints related to All Roads Construction Ltd. ("All Roads").

# 2 IMPLEMENTATION

**2.1** This procedure should be followed by all employees. This procedure provides guidelines for the handling of external complaints directed towards All Roads operations.

# 3 SCOPE

**3.1** Applies to any employee or third party contracted by All Roads who receives a complaint related to All Roads on-site operations, including but not limited to odour and fugitive dust.

# 4 RESPONSIBILITIES

# 4.1 The Complaint Receiver is responsible for:

- **4.1.1** Acknowledging all complaints received.
- **4.1.2** Receiving the complaint in a manner that is respectful to the complainant. Proper complaint processing procedures (as outlined in this document) will be followed when a contracted third party, or any other All Roads employee is intaking the complaint from the complainant.
- **4.1.3** Logging the details of incoming complaints and forwarding information and relevant materials (e.g. emails, letters, voice messages) to the site compliance coordinator and/or All Roads management as applicable.

# 4.2 The Site Compliance Coordinator is responsible for:

- **4.2.1** Monitoring email for incoming complaints (e.g. info@allroadsconstruction.com) or other email as identified, or personal email of the site compliance coordinator.
- **4.2.2** Receiving on-site complainants in-person in a manner that is respectful to the complainant and logging the details of the complaint.
- **4.2.3** Ensuring all complaints logged are appropriately investigated.
- **4.2.4** Responding to all external queries regarding complaints.

**Complaint Handling** 

- **4.2.5** Facilitating communications between relevant personnel regarding complaints.
- **4.2.6** Reviewing the findings of all complaint investigations and responding appropriately.
- **4.2.7** Forwarding details of closed complaint investigations to the General Manager and/or All Roads management as applicable

# 4.3 The General Manager is responsible for:

- **4.3.1** Ensuring that all on-site operations are compliant with Standard Operating Procedures and all applicable regulations.
- 4.3.2 Ensuring all complaints logged are appropriately investigated
- **4.3.3** Reviewing all complaint investigations to ensure investigations are thorough and timely, operations are compliant with Site SOPs and required regulations.

# 5 DEFINITIONS

**5.1** Complaint: A complaint received related to on-site/facility operations (including but not limited to odour/fugitive dust) which is unrelated to product quality.

# **6 MATERIALS AND EQUIPMENT**

- 6.1 Materials
  - **6.1.1** N/A
- 6.2 Equipment
  - **6.2.1** N/A

# 7 SAFETY AND ENVIRONMENTAL INFORMATION

- **7.1** No employee should perform any procedure without the appropriate SOP training. If an employee has any safety concerns with completing a task outlined in an SOP, the immediate supervisor should be notified. Under the provisions of the Canada Labour Code, R.S.C 1985 c. L2 employees have the:
  - **7.1.1** The Right to Participate: Employees have the right and responsibility to participate in identifying and correcting job-related health and safety concerns through workplace health and safety committees or worker health and safety representatives.

**Complaint Handling** 

- **7.1.2** The Right to Know: Employees have the right to be informed of known or foreseeable hazards in the work place and to be provided with the information, instruction, training and supervision necessary to protect their health and safety.
- **7.1.3** The Right to Refuse Dangerous Work: Employees have the right to refuse dangerous work if they have reasonable cause to believe that a condition at work presents a danger to themselves, and the use or operation of a machine or apparatus presents a danger to the employee or another employee and the performance of an activity constitutes a danger to the employee or to another employee. In order for, an employee to be protected by the Code, the employee must follow the proper procedure.

# 8 PROCEDURE

# 8.1 Receiving and Logging Complaints

- **8.1.1** When a complaint is received via email:
  - **8.1.1.1** The individual who receives the complaint will forward the original email to the site Compliance Coordinator inbox, or if unknown, to the general/facility manager for logging and review. Relevant details are to be recorded in the 'Complaint Information Form'.
  - **8.1.1.2** The individual who receives the complaint will respond to the incoming email acknowledging receipt of the complaint.
  - **8.1.1.3** The individual who receives the complaint will relay to the complainant that their message has been forwarded to the appropriate parties for further investigation.

# 8.1.2 When a complaint is received via text-message/voice message:

- **8.1.2.1** The individual who receives the complaint will forward the messages (as applicable) to the site Compliance Coordinator for logging and review
- **8.1.2.2** The individual who receives the complaint will acknowledge their receipt of the complaint's message in a manner that is respectful to the complainant.
- **8.1.2.3** The individual who receives the complaint will relay to the complainant that their message has been forwarded to the appropriate parties for further investigation. Relevant details are to be recorded in the 'Complaint Information Form'.

**Complaint Handling** 

# **8.1.3** When a complaint is received via phone:

- **8.1.3.1** The individual who receives the complaint will forward the call to the site Compliance Coordinator for logging and review.
- **8.1.3.2** If the complainant prefers, the individual who receives the complaint will provide the complainant with the appropriate contact details of the site Compliance Coordinator (email or other as applicable). Relevant details are to be recorded in the 'Complaint Information Form'.

# 8.1.4 When a complaint arrives on-site to speak to someone in-person:

- **8.1.4.1** The complainant will be directed to the Compliance Coordinator by whomever receives the complainant.
- **8.1.4.2** The Compliance Coordinator will receive the complainant, and acknowledge their concerns in a manner that is calm and respectful.
- **8.1.4.3** The Compliance Coordinator will log the details of the complaint in the 'Complaint Information Form'.

# 8.2 Complaint Investigations

- 8.2.1 Performing an investigation:
  - **8.2.1.1** The Compliance Coordinator will engage the appropriate personnel to investigate complaints in a timely manner. All complaints should be targeted for closure within 30 days. Any reason for extension should be documented within the complaint investigation and approved by All Roads management as part of the complaint approval process.
  - **8.2.1.2** Complaint investigations will be documented by the Compliance Coordinator as follows:
    - Complete a description of the complaint and relevant conditions at the time of complaint (e.g. wind speed/direction, precipitation, site activity)
    - Determine which area(s) of the site requires investigation with justifications. Determine which steps would be useful for determining the root cause and indirect cause of the complaint.
    - Determine trends by using historical data collected
    - Record information resulting from the in-dept investigation. Include detailed information about the trending results and their effect on any

**Complaint Handling** 

- additional steps that may be required. Determine and record the root cause and indirect cause(s).
- Determine if Corrective Active Preventative Action is required and provide justification.
- **8.2.1.3** Managers in affected departments will review the investigation and agree or disagree with the findings. If there is a disagreement, the form will be returned to the Compliance Coordinator for further investigation.

# **8.2.2** Closing an investigation:

- **8.2.2.1** A complaint is considered closed when a resolution has been accepted by all parties involved, or all reasonable actions have been taken. If an agreement cannot be made between All Roads and the complainant, information will be kept on file detailing the action(s) completed to address the complaint.
- **8.2.2.2** Final communications regarding the complaint and actions completed to address the complaint will be sent via email to the parties involved. If contacting is necessary and an email is not available, parties will be contacted via their preferred method of contact.

Complaint Handling

Complaint Information Form							
Date/Time Received		Receiver Initials					
Complainant Name							
Complainant Contact Information							
Date/Time of Detection							
Location of Detection							
Perceived Source of Issue							
Issue Description							
Effect of Issue							
Additional Notes							