

Appendix 13.6-E Orica Blast Site Safety Manual - Explosives and Packaging Disposal

ORICA NORTH AMERICA BLAST SITE SAFETY MANUAL

Explosives and Packaging Disposal

1.0 APPLICATION

This part of the Blast Site Policy applies to all wholly-owned ORICA INC. operations and all joint ventures in which ORICA INC. is a party.

THE INFORMATION, PREVENTION MEASURES AND PRECAUTIONS SET FORTH HEREIN ARE TO BE USED AS GENERAL GUIDELINES ONLY AND DO NOT CONSTITUTE MINIMUM COMPLIANCE STANDARDS. FURTHER, THESE GUIDELINES ARE NOT INTENDED TO PROVIDE ANY BASIS BY WHICH ANY LEGAL OBLIGATION, DUTY OR LIABILITY MAY ARISE OR BE IMPOSED.

2.0 INTRODUCTION

The proper disposal of wastes that are sometimes generated at a blast site is a federal and state requirement. When explosive waste and packaging waste are involved, particular care must be exercised to maintain compliance with applicable regulations. The following sections will provide guidance for the proper management of both hazardous and non-hazardous explosive and packaging wastes.

3.0 PURPOSE

The purpose of this document is to provide specific guidelines for proper management of the following:

Non-hazardous Explosive Related Waste
Non-hazardous Packaging Waste
Hazardous Explosive Waste
Hazardous Packaging Waste

4.0 Non-Hazardous Explosives Related Waste

Appropriate efforts should be made to use raw materials and manufactured products for their intended use. If it has been determined that material and/or products must be disposed of, and the material/product cannot be classified as a hazardous waste, arrangements must be made with properly authorized disposal facilities. A material that is either corrosive, ignitable (including oxidizers), reactive, or toxic is not non-hazardous. If there is any uncertainty as to the proper classification of the material/product, contact the Corporate Environmental Manager or a qualified environmental consultant.

The types of non-hazardous explosive related waste typically found on a blast site include: scrap Nonel tubing, scrap copper wire, and blasting agents or precursors heavily contaminated with soil. The blasting agents or precursors can only be classified as non-hazardous if they cannot detonate due to the amount of contamination; otherwise they should be placed into the bore hole and utilized for their manufactured/intended use.

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Municipal or industrial landfills are typically used to disposal of non-hazardous explosive related waste. Never use a landfill unless they are permitted by either the state environmental authority or the Environmental Protection Agency. Federal law attaches liability for disposed waste to the generator of the waste. It is recommended that an industrial landfill be used because of the higher degree of protection against liability issues.

Landfill operators must know the types and quantities of waste they are receiving from generators to confirm they are in compliance with their permits. Arrange with the landfill operator for the disposal of non-hazardous explosive related waste in advance of transporting the waste to the landfill. If any questions arise over the documentation that the landfill operator is requesting, contact the Corporate Environmental Manager or a qualified environmental consultant.

5.0 Non-Hazardous Packaging Waste

Figure 1 provides a flow diagram to assist in the process of determining if the container can be managed as a hazardous or non-hazardous waste.

Before disposing of non-hazardous containers, boxes should be broken-down and bags should be cut open to provide for the highest degree of product removal, and to address any potential confusion over management of the former container as a Transport Canada packaging. To facilitate product removal to the highest degree, tap the outside of the bag with a stick. All material removed from the packaging is to be recovered and used for is manufactured use. It is required that the shipping name, identification number, and hazard warning labels on the debris be removed or obliterated. The removal or obliteration of these items serve to: address the concerns of a landfill operator or recycler; avoid undue concern of emergency responders at the scene of an incident; avoid intentional misuse of these items by criminals; and so forth. The non-hazardous debris would not be considered a TRANSPORT CANADA hazardous material and recycling of the packaging can be performed, or disposal at the type of landfills identified in Section 4.0 should be secured.

6.0 Hazardous Explosives Waste

Appropriate efforts should be made to use raw materials and manufactured products for their intended use. If it has been determined that material and/or products must be disposed of, and the material/product demonstrates it is corrosive, ignitable (including oxidizers), reactive, and/or toxic it is classified as a hazardous waste. If there is any uncertainty as to the proper classification of the material/product, contact the Corporate Environmental Manager or a qualified environmental consultant.

The types of hazardous explosive related waste typically found on a blast site include:

Reactive - Class 1 explosives, if discarded are hazardous waste because of their reactivity. They are given an EPA waste code of D003 Explosives.

Ignitable - All raw materials used in the industry labeled as TRANSPORT CANADA oxidizers are hazardous waste. Oxidizers include ammonium nitrate prill, ammonium nitrate solution greater than

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65%, calcium nitrate, nitrites, and perchlorate compounds. These materials are given an EPA waste code of D001 Oxidizers.

Acids/Bases - These materials are corrosives. If not listed individually by EPA, they have the waste code of D002.

Generators of these types of materials fall into one of three categories: 1) A conditionally-exempt small quantity generator (CESQG), a small quantity generator (SQG), or a large quantity generator (LQG). CESQG's generate less than 100 kilograms per month of hazardous waste. The amount of waste materials generated at a blast site typical fall into the CESQG category. An SQG produces between 220 to 2200 pounds of hazardous waste per month, and an LQG produces 2200 pounds per month or more of hazardous waste.

Three requirements that CESQG's must comply with are: 1) to characterize the waste; 2) follow TRANSPORT CANADA shipping requirements; and 3) provide for disposal at a facility that is permitted by the state environmental authority or Environmental Protection Agency.

It would be unusual for a blast site to generate more than 100 kilograms per month. In the event that an amount greater than 100 kilograms per month is generated, the Corporate Environmental Manager must be contacted to assist in complying with an extensive set of state and/or federal regulations.

7.0 Hazardous Packaging Waste

Figure 1 provides a flow diagram to assist in the process of determining if a package can be managed as a hazardous or non-hazardous waste. Packaging waste must be regarded as hazardous waste if it contains oxidizers or explosives in an amount of one inch or more on the bottom or inner liner, or more than 3 percent by weight of the total capacity of the package remains in the package or inner liner. Packaging waste may also become a hazardous waste if it demonstrates the characteristic of an oxidizer or explosive.

Generally, the limited amounts of remaining material on the packaging would not demonstrate the characteristic of an oxidizer or explosive. A good example is an empty ANFO bag, and as such, the procedure provided in Section 5 would be followed instead. Examination of the packaging and the removal of any oxidizers or explosives found during this process will assist in preventing the generation of hazardous waste. The small amounts of oxidizers and explosives found during the examination are to be used for their manufactured purpose (e.g., placed in a bore hole to utilize their explosive strength).

Hazardous packaging waste can potentially demonstrate the characteristics of an oxidizer and/or an explosive. Hazardous waste that demonstrates the characteristic of an oxidizer carries the EPA waste code of D001; the characteristic of an explosive carries the EPA waste code of D003. To determine if these waste codes apply, a representative sample of the waste would be subjected to the following tests: 1) the Bureau of Mines gap test; 2) the Bureau of Mines internal ignition test; and 3) the TRANSPORT CANADA oxidizer test procedure provided within Appendix F to 49 CFR Part 173. Generator knowledge can also be used

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to determine if a waste has these hazardous characteristics. The use of generator knowledge is often challenged by regulators and questioned by HSE personnel to ensure the hazardous waste determination is reasonable and consistent with their understanding of particular wastes.

If it is determined that the packaging is a hazardous waste, and containers can be defined as a TRANSPORT CANADA packaging, a conditionally exempt small quantity generator can transport these packagings in the same manner as when it previously contained a greater quantity of that hazardous material. If the same packagings are broken down and they no longer meet the definition of a "packaging", the resulting debris would have to be properly classified as per TRANSPORT CANADA or an exemption would be needed. This process can be time consuming if an explosive characteristic is present. It is suggested that regulatory provisions offering exemptions or becoming party to particular exemptions be pursued to ease the regulatory burden associated with obtaining specific classification and shipping requirements. The removal or obliteration of the shipping name, identification number, and hazard warning labels must be performed on these broken down packagings.

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8.0 Open Burning

In order to treat a hazardous waste by open burning, an extensive set of regulations must be complied with and either interim status or a formal permit must be secured unless the immediate response provision is exercised to address a non-routine and infrequently generated hazardous waste. EPA published clarifying language in the military munitions rule that Resource Conservation and Recovery Act (RCRA) generator, transporter, and permit requirements do not apply to immediate responses to threats involving explosives, but the provision is only to address an immediately needed response to a discharge or imminent and substantial threat of a discharge of a hazardous waste under 40 CFR 264.1(g)(8), 265.1(c)(11), and 270.1(c)(3). In addition, implementation of the immediate response provision must be done by a person that is trained in explosives emergency responses. Guidance from the EPA to IME dated November 30, 1988, indicates that

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damaged or unusable explosive waste that cannot be stored or transported off-site qualifies for implementation of the immediate response provision.

In order to effectuate their open burning standard at a "use site", OSHA requires coordination with environmental agencies to secure the proper permits for the treatment of contaminated explosives packagings or implementation of the emergency response provision of RCRA. Whether or not the packagings are hazardous or non-hazardous waste, employee protection laws require that explosive contaminated packagings that present a safety concern be open burned at an approved isolated location when they are generated at a "use site". At a minimum, coordination with the environmental agencies would be needed to secure an open burning variance from the air quality division, and if it is a hazardous waste, notification to the hazardous waste division for implementation of the emergency response provision.

Over the years, EPA has secured a prohibition on open burning in all states through their approval process of granting states the authority to administer Clean Air Act regulations. Open burning is permissible only if approval is secured by the agency in charge of administering the Clean Air Act regulations for the state, the burning would eliminate a threat to public safety, and the safety concerns cannot be addressed by other means. It is important to review any secured approval to ensure the approval captures Clean Air Act regulations promulgated by the state in which the open burning will be performed. For example, it is likely that an approval from the local Fire Marshal will not provide Clean Air Act approval.

A potential option to avoid these requirements is to decontaminate non-hazardous materials since this activity would not require a RCRA hazardous waste permit. If hazardous waste is involved, and the immediate response provision is not an option, an extensive amount of activity is needed to secure a permit from the environmental agency for what they consider to be a hazardous waste management unit performing thermal destruction.

If open burning is available under the immediate response provision of RCRA, it will require the cooperation of the use site's operator/owners since the open burning will need to take place on their property. Unless it is authorized by a person that is trained in explosives emergency response (reference the regulatory definition), the open burning must take place at the use site due to the safety issues brought forth in qualifying for the immediate response provision.

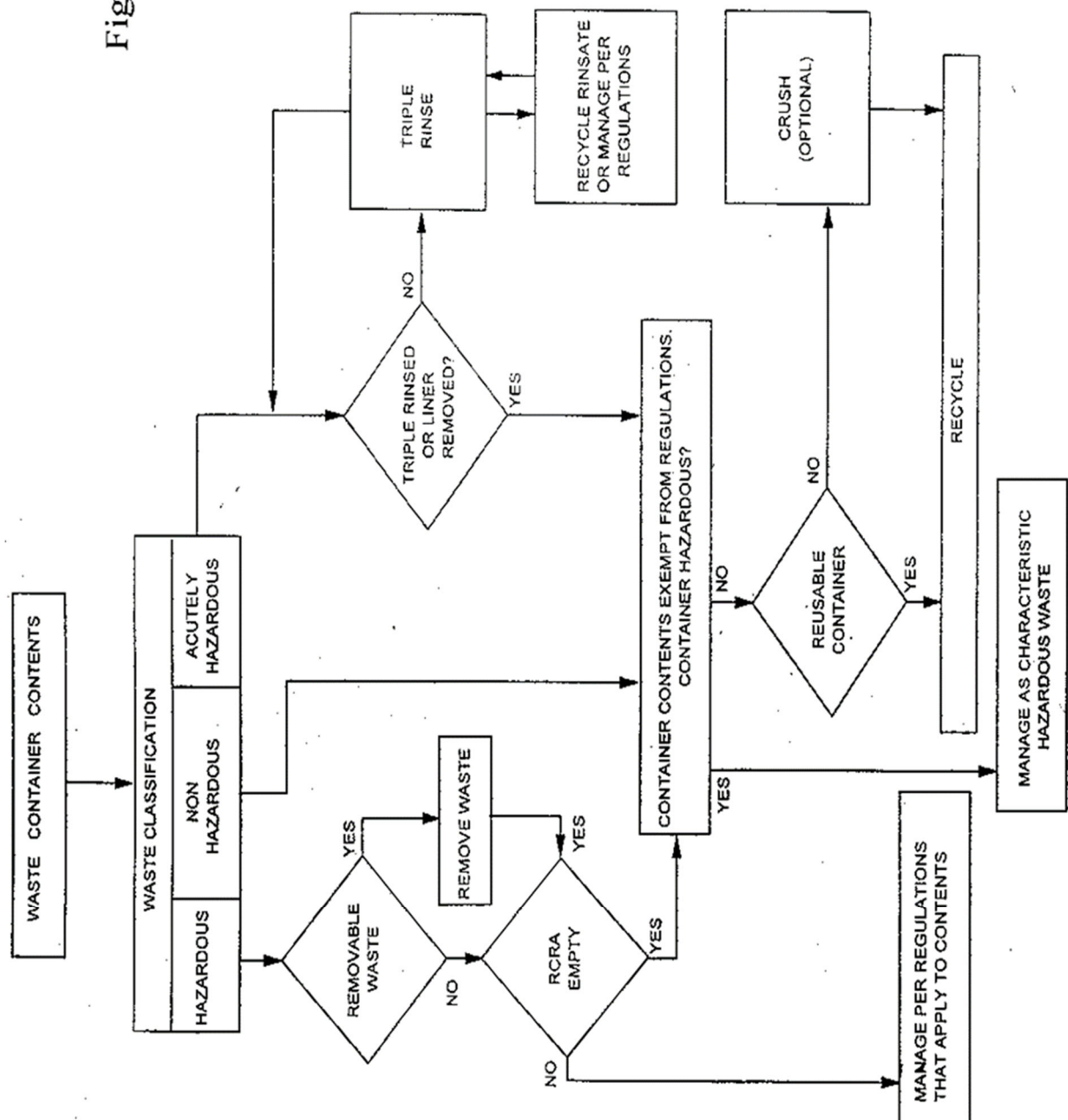


Figure 1