Oyu Tolgoi LLC

Health, Safety and Environment Management System Procedures

Spill Response Procedure

Spill Response Procedure		
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1. PURPOSE

To describe the effective and efficient response process to be implemented in the event of a hazardous material spill so as environmental impacts of the spill are minimised.

2. SCOPE

This procedure is applicable to all spills at workplaces managed by or on behalf of Oyu Tolgoi LLC.

3. ROLES AND RESPONSIBILITIES

Roles	Accountabilities
Environment Manager	• Provide the necessary management support and resources to implement the procedure • Approve and make this procedure available to all Oyu Tolgoi employees and contractors • Make available environmental expertise to monitor spills and advise staff and contractors on spill response
Department Managers	• Provide the necessary management support and resources to implement the procedure • Approve and make this procedure available to all Oyu Tolgoi employees and contractors • Make available environmental expertise to monitor spills and advise staff and contractors on spill response
Superintendents and Supervisors	• Implement effective engineering and operational controls to minimise the occurrence of spills in their responsible areas • Arrange for personnel to receive training on spill response and reporting where required by their role
Superintendents and Supervisors	• Implement the requirements of this procedure in their work areas • Make staff and contractors available to participate in training and awareness sessions on spill response
Chemicals and Waste Coordinator	• Provide technical advice in spill prevention, control, containment, clean-up and disposal • Approve the disposal of all contaminated materials generated from responding to hazardous material spills
Employees and contractors	• Report all hydrocarbon and chemical spills to their immediate Supervisor. • Identify and respond to hydrocarbon and chemical spills in accordance with this procedure
Training Manager	• Define hydrocarbon and chemical training requirements for employees and contractors through inductions and other training programs

4. PROCEDURE

4.1. General requirements

a) Employees and contractors are responsible for verbally reporting all spills to their immediate supervisor;

b) Supervisors will then coordinate the spill response process and report the spill as an environmental incident on *Prospect* in accordance with OT HSE MS Incident management, investigation, documentation and review procedure;

4.2. Spill response kits

a) Supervisors will clearly label and store spill response kits in locations that will facilitate a prompt response to spills;

b) Spill response kits in all work areas will contain the following equipment:

- Shovel;
- 2 x Respiratory masks;
- Absorbent Material (pads and socks);
- 2 x Goggles;
- 1 x 60L sealable container;
- 2 x PVC gloves;
- 1 x jug ensorb; and
- 1 x red wheelie bin;

c) Spill response kits will be carried in mobile machinery where a significant spill risk is identified with its operation. The contents of these spill kits will be specific to the risks presented from the mobile machinery and will be adequate and appropriate for the materials being transported; and

d) Where there are significant spill risks apparent outside of workshops or designated hazardous material storage areas (e.g. pit, haul roads, park-up areas etc), spill response equipment will be specific to these risks posed.

4.3. Control of all hazardous material spills

a) The health and safety of employees, contractors and bystanders must be considered prior to initiating the spill response process;

b) Personnel considered at risk of harm in the event of a spill must be evacuated from the spill impact area by the Superintendent or Supervisor in charge of the work area;

c) If the spill presents an emergency risk to bystanders or the environment (e.g. fire, explosion, groundwater contamination), the site emergency response team must be immediately notified of this situation by the individual that identifies this risk;

d) If safe to do so, trained individuals will attempt to control the spill at source and remove all sources of heat and ignition (eg. Turn off leaking valve, stand up overturned drum, isolate burst hydraulic hose etc);

e) Spills will then be reported verbally to the immediate Supervisor, who will arrange for spill containment and clean-up to occur; and

f) Superintendents or Supervisors will notify the Environmental Department of the spill details to allow advice to be provided and statutory reporting processes to be initiated.

4.4. Containment and Clean-up of Hydrocarbons

a) Contain the extent of the spill by using absorbent material/socks around the perimeter of the spill or earthen bunds if outside of designated workshops or storage areas;

b) Once contained, excess hydrocarbons may be soaked up using absorbent materials, including dirt, or via use of a sucker truck if the spill is present as free product, or is on water.;

c) Prevent hydrocarbons entering drains and waterways. If hydrocarbons do enter the drains or waterways these should be dammed or have booms placed in them to minimise the spread of hydrocarbons; and

d) Waste material should then be disposed of appropriately. “Kitty litter”, absorbent booms, pillows and matting should be placed into designated bins. Contaminated soil and water should be removed and stored in a designated area as advised by the Chemicals and Waste Coordinator.

4.5. Containment and Clean-up of Sewage

a) Contain the spill with sand or earth to prevent it entering waterways and drains;

b) Calcium hypochlorite powder will be spread around the site for spills likely to be encountered by personnel. Any waste water that enters waterways and/or drainage systems should be disinfected with the use of calcium hypochlorite powder; and

c) Waste water shall then be sucked up with the use of a sucker truck and taken to a waste water treatment plant. Remaining water and solids should be disinfected using calcium hypochlorite powder.

4.6. Containment and Clean-up of Ammonium Nitrate

a) Contain the extent of the spill with an inert material such as sand or earth avoiding the generation of dust; and

b) Recover both liquids and solids and seal in properly labelled salvage containers for recycling. If there is unrecoverable residue, contact the Mining Explosives representative for disposal options.

4.7. Containment and Clean-up of Chemicals

a) Contain the extent of the spill using sand, earth, sawdust or other inert material to prevent it entering waterways and drains; and

b) Chemicals clean up may vary depending on the chemical type. General purpose spill kit supplies (instead of oil absorbent) should be used. Collect recoverable product (if possible) and dispose at an approved disposal site or facility in accordance with advice provided by the Waste and Chemical Coordinator.

4.8. Containment and Clean-up of Tailings

a) If the levels of suspended solids are low, spills are left to evaporate and are not contained.

b) If the suspended solid levels are high and there is a risk of impacting vegetation or silting up waterways, the tailings should be washed away with excess water.

4.9. Containment and Clean-up of Battery Acid

a) Contain the spill and neutralise with a basic substance such as sodium bicarbonate in accordance with advice provided by the Waste and Chemical Coordinator;

b) Collect recoverable product and neutralise with sodium bicarbonate in accordance with advice provided by the Waste and Chemical Coordinator; and

c) Dispose of with process water onsite.

4.10. Disposal of Contaminated Material

a) For spills rated as significant risk on incident reporting, quality of clean-up work will determined by follow-up sampling of contamination receiving environment and compared against the Mongolian environmental standards on permissible levels of pollutants in air, water and soil;

b) If any exceedance of pollutant permissible levels is noted, clean-up work will be considered as inadequate and further clean-up will be required;

c) Follow up sampling will be carried out for all spills to evaluate reporting requirements to the environmental inspector; and

d) Hydrocarbon contaminated soils will be excavated and placed within a dedicated area for storage and treatment.

4.11. Reporting

a) Although the current legislation does not set spill criteria for reporting, the Environmental Department will report spills exceeding the following amounts to state environmental inspectors:

Sewage: ≥ 100 m3;
Water: ≥ 1,000 m3;
Hydrocarbon: ≥ 10 m3;
Tailings: ≥1,000 m3; and

Other chemicals as deemed necessary by the state environmental inspector; and

b) All incidents reported on Prospect are followed up by causal investigation and action management.

4.12. Training

a) Training on hazardous materials handling and spill response will be provided to employees and contractors that require it as defined by the Training Manager; and

b) Chemical and Waste Coordinator will provide technical advice and assistance on spill response.

5. DEFINITIONS

Spill: An event that involves any volume of material discharging to the environment that has a negative environmental impact. For example a diesel leak from a grader, a burst water pipe etc.

Bund or Bunding: A physical barrier that confines and prevents materials from discharging to the environment and allows recovery of materials in the event of a spill.

Secondary Containment: An additional measure to contain materials in the event of a spill. Examples include bunding and double skinned pipes or tanks.

Drain: Artificial watercourse, storm water drain or man-made gully.

Hydrocarbons: includes diesel, petrol and the various oils used throughout Oyu Tolgoi project.

Absorbent: Products such as synthetic or organic pads, booms and powders that are used to contain spills. These are available in a variety of different forms and functions.

Ensorb™: An absorbent material used in spill kits. Ensorb™ can absorb any kind of liquids.

Material Safety Data Sheets (MSDS): A document supplied by manufacturer to provide information to users on the health and environmental hazards, safety precautions and storage and disposal procedures for a substance.

6. REFERENCES AND RELATED DOCUMENTS

	Name	Location
Legal and Other Requirements	Procedure for storage, transportation, usage and disposal of toxic chemicals and hazardous substances, February 3, 2009	Legal register
	MNS 5885:2008 Acceptable concentration of air pollutant elements. General technical requirements.	
	MNS4585:1998 Water Quality. General requirements.	
	MNS 5850:2008 Soil quality. Soil pollutants elements and substance.	
Oyu Tolgoi HSE Management System	Non-conformance, incident and action management procedure (OT-14-PRC-0009-E)	OT Portal
	Incident management, Investigation, Documentation and Review Procedure (OT-14-PRC-0003-E)	
	Incident Management Flowchart (OT-14-MAP-0006-E)	
	Training and Awareness Procedure (OT-06-PRC-0001-E)	
Communication / Training	Hazardous materials and contamination control training	OT Portal

6.1 Other Requirements

The primary Rio Tinto Standard that applies to hazardous material management is E5 - *Hazardous materials and contamination control*, 2008. Other relevant documents include:

- B4 Hazardous substances standard (Occupational Health);
- E2 Air quality control standard;
- E9 Land use stewardship standard;
- E10 Water use and quality control standard;

- EBRD Performance Requirements (2008) (particularly PR1: Environmental and Social Appraisal and Management and PR3: Pollution Prevention and Abatement);
- IFC EHS Guidelines for Mining, 2007; and
- IFC General EHS Guidelines, 2007.

7. DOCUMENT CONTROL

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