NEWMONT WAIHI GOLD LTD

HYDROCARBON MANAGEMENT PLAN

OCTOBER 2012

Prepared By: Mark Burroughs, Russell Squire

Approved By: Kerry Watson
Environmental Manager

Approved By: Steve Price
Operations Manager

Approved By: Mark Buttimore
for Hauraki District Council
## CONTENTS

1. Purpose .................................................................................. 4  
2. Scope...................................................................................... 4  
3. Volumes.................................................................................. 4  
4. Risk......................................................................................... 5  
5. Legal requirements .................................................................. 5  
6. Bulk Storage Facilities .......................................................... 6  
7. LPG.......................................................................................... 6  
8. Diesel Handling...................................................................... 7  
9. Effluent treatment................................................................... 7  
10. Hydrocarbon Waste collection ............................................. 8  
11. Hydrocarbon Recycling and Disposal ................................. 8  
12. Spill Management .................................................................. 9  
13. Monitoring & Measurement .................................................. 10  
14. Training.................................................................................. 11  
15. Improvements ....................................................................... 12
1. **PURPOSE**

The purpose of the Newmont Waihi Gold Hydrocarbon Management Plan is to:

- Protect human health.
- Minimise hydrocarbon contamination of the natural environment.
- Conform to the Newmont corporate standard for Hydrocarbon Management (NEM-ENV-S.031).
- Comply with legal requirements.

2. **SCOPE**

This plan describes the management of all hydrocarbon products, waste and related infrastructure at Newmont Waihi Gold (NWG) and applies to all personnel, including contractors. The main areas where hydrocarbon activities occur and the focus of this plan are:

- Mill Workshop & Stores (NWG).
- Diesel storage facility by the Mill conveyor (NWG).
- Bulk storage facilities at the Development Site workshop, McMahon Contractors Ltd (MCL).
- Bulk storage facilities at the Martha Mine Surface Facilities Area (MCL).
- Favona diesel storage facility, Leighton.
- Favona workshop bulk oil stores (Leighton).
- Smaller diesel tanks at the explosives manufacturing shed, and adjacent to the Surface Facilities Area (MCL).

3. **VOLUMES**

Current mean annual usage is as follows:

- 1,115 kilolitres diesel for electricity generation
- 4,361 kilolitres diesel for non-electricity generation
- 7.36 kilolitres of petrol
- 715 kilolitres of LPG
- 198 kilolitres of lubricants
- 3 tonnes of solvents

Current waste produced:

- 72 tonnes of waste oil
- 6.9 tonnes of waste grease
4. RISK

Hydrocarbon transport and use pose a risk to the environment and personal safety when products are spilt or leaked, or when storage facilities are inadequate or not suitably maintained. Hydrocarbons are used daily to refuel and maintain heavy machinery and plant. Invariably spills occur from burst hydraulic hoses, refuelling, damaged or leaking fuel tanks, and handling during maintenance activities. Major incidents can occur during transport or transfer of bulk supplies. There is always a risk of fire or explosion.

Hydrocarbon spills and leaks can contaminate soil, surface and ground water and impact flora and fauna.

While disturbed sites such as in the mine, mill and development site may not be adversely impacted directly by hydrocarbon contamination, other negative impacts include the following:

- Contamination of ore could potentially reduce gold recovery processes.
- Remedial treatment of contaminated rock is an unbudgeted extra cost and precaution.
- Disposal of contaminated rock on the development site is a potential risk if contaminated surface runoff reaches silt ponds and if discharge occurs to rivers.
- The water treatment plant is not set up to treat hydrocarbon contaminated water received from pit dewatering or collections ponds.
- Closure and reclamation costs are potentially affected where there is contamination in high use areas.

5. LEGAL REQUIREMENTS

Diesel and petrol are controlled under New Zealand law by the Hazardous Substances and New Organisms Act 1996 and associated regulations. All large above-ground diesel tanks (capacity greater than 5000 litres) on site require a Stationary Container Test Certificate. A Test Certificate demonstrates that bulk fuel tanks meet requirements in regard to their design, construction and installation (Refer also to Legal and Other Requirements NWO-INT-004-SYS).

Relevant standards are: Hazardous goods storage facilities (OSH) 1989, AS/NZS 1596:1997 The storage and handling of LP Gas; and AS1940:1993 The storage and handling of flammable and combustible liquids.

A register of licences (NWO-INT-004-SYS-L3 Consents, Permits Register.xls) is maintained, and expiry dates monitored, by the IMS Coordinator. The Safety Manager ensures licences are updated when
required. MCL and Leighton maintain and update their licences. Hardcopies of licences for Newmont and copies of MCL and Leighton licences are kept in the GM Personal Assistant’s Office.

Resource consent conditions do not permit discharge of oil or grease from silt ponds to adjacent streams or rivers (Environment Waikato Permit 971285 & 971311) and no consents held by the company authorise discharge of hydrocarbons to the environment.

6. BULK STORAGE FACILITIES

Above ground fuel

Bulk storage of diesel occurs in the MCL Pit surface storage facilities (2 x 35,000L), at the Mill by conveyor CV8 (10,000L), at the Development Site MCL workshop area (35,000L), and at the Favona site (30,000L & 20,000L).

All above ground bulk storage facilities are designed, installed and maintained by BP. All tanks are bunded (including P.U.F.F. tanks that are contained within secondary tanks – two at the Pit (MCL) and one at the Development Site (MCL).

Oil

Bulk oil storage tanks (up to 12,000L) are located inside the Favona workshop and next to MCL workshops at the Development Site and Pit. These are labelled to identify various products including waste oil. All workshops are required to store drums of oil in bunded areas to contain any spillage.

7. LPG

Supplied by BOC Gases to the Mill bulk storage LPG tanks. These are controlled under New Zealand law by the Hazardous Substances and New Organisms Act 1996 and require a Location Test Certificate that ensures the tanks meet requirements in regard to their design, construction, installation as well as emergency management.
8. DIESEL HANDLING

During refuelling, operators maintain constant observation of the fuel lines. Dispensing pump nozzles contain automatic shut-off valves as a precautionary measure to reduce the likelihood of overfilling.

Spills can be controlled by immediately shutting down the source of a leak and kits are available adjacent to refuelling facilities to contain spills. Minor spillage onto the concrete refuelling pads drains to API separators. Drainage from surrounding areas is directed away from the refuelling pads to minimise separator loading.

9. EFFLUENT TREATMENT

Four BP-installed API Separators are located adjacent to the diesel tanks and heavy vehicle wash-bay sumps at both the mine and development workshops. Copies of the design calculation details are kept by the IMS Co-ordinator and MCL Purchasing Officer.

Hydrocarbon containment by the separators allows for 2500 litres above the normal water level. The APIs are maintenance free so long as they are regularly emptied. It is important that mud and dirt is kept under control. Routine checks are required to ensure the facility functions properly. Instructions are kept on the fuel facility. The facility is managed by MCL (the respective Workshop Supervisors).

At Favona, an API separator, 3,000L capacity, is located between the truck wash-bay and the workshop. This separator accepts runoff from the Favona fuelling pad, truck wash bay sump overflow and the drum storage container. Hydrocarbons and sediment are retained and treated water is discharged into an adjacent drain to report to the Favona Silt Ponds.

At the south-eastern end of the workshop, a Humeceptor™ separator, 3,000L capacity, intercepts runoff from in front of the workshop and any controlled discharges from the bulk oil storage bund. Hydrocarbons and sediment are retained and treated water is discharged into an adjacent drain to report to the Favona Silt Ponds.

An API separator (3,000L capacity) intercepts runoff from the Mill bulk fuelling pad. Hydrocarbons and sediment is contained and the treated water is released to an adjacent drain by CV8 to report to the Tails Collection Pond.

Transpacific are contracted to pump out and dispose of contaminated water & solids in the separators at both Favona workshop and the Mill bulk fuel facility. These are taken to Transpacific's facility in Tauranga and treated and disposed of in accordance to NZ regulations.
Accumulated rainwater from the bulk fuel storage tanks is routinely monitoring and disposed of by controlled discharges onto adjacent fuelling pads, which drain through API separators.

10. HYDROCARBON WASTE COLLECTION

Hydrocarbon waste is managed at all workshops with bunded tanks and/or sheds for the storage of waste oil awaiting collection, and designated hydrocarbon waste bins for the disposal of hydrocarbon contaminated solids (filters / pads / booms / rags or other material).

Hydrocarbon waste and waste oil from Mill maintenance activities is collected and stored in 205 litre drums by maintenance personnel. The waste is stored in the bunded NWG Hydrocarbon Shed east of the main Stores building.

Stores personnel monitor and maintain waste oil and despatch waste records. Refer to procedure “Waste Oil Collection” (NWO-INT-009-STR-S16).

11. HYDROCARBON RECYCLING AND DISPOSAL

Transpacific collect both waste oil and hydrocarbon contaminated materials from the Stores Hydrocarbon Shed and transport it to their waste management division for treatment. This is a facility in Tauranga, New Zealand that recycles hydrocarbon based materials. The company has a certified compliance with the NZCIC Premises Inspection and Certification Programme. Transpacific accept the following materials:
- Oily greasy rags
- Empty oil and grease containers
- Empty oil filters
- Contaminated soil
- Waste oil
- Solvents (sent to their Auckland facility)

Treatment is by crushing or hydrocarbon separation and recycling, solvent distillation. Treated solid wastes are land filled at a Waste Management (another Transpacific division) disposal site in accordance with NZ regulations. This site is inspected every three years as part of the Hydrocarbon Transportation internal auditing requirements. Last inspection was completed on the 7th of March 2012.

Salters (a BP sub-contractor) collects waste oil from site workshops. BP participate in the R.O.S.E (Recovering Oil Saves the Environment) scheme which is accredited by the Ministry for the Environment. Used product is
treated and primarily used as an alternate fuel source at Fulton Hogan’s asphalt and bitumen plant

12. **SPILL MANAGEMENT**

The management of hydrocarbon spills is detailed in both the procedure "Spill Response" (NWO-INT-009-ENV-S35) and the Newmont Waihi Emergency Management Plan (NWO-INT-018-SYS-M1).

The Exploration Department has a Spill Management procedure (NWO-INT-009-EXP-S5) for drilling rig activities.

Any significant spill is considered an emergency, and emergency procedures are to be initiated if there is a likelihood of human hazard, the spill entering drains or streams or the leaking of bulk storage facilities.

Spills not considered emergencies are to be responded to by following the 5 basic steps of **Control, Contain, Clean up, Dispose and Report**.

**Spill Kits**

All work areas where hydrocarbons are routinely used have adequate spill clean-up material close at hand should a spill occur.

Spill Kits are located in the following locations:
- Stores (NWG)
- Mill Workshop (NWG)
- Mill Lab (NWG)
- Gold Room (NWG)
- Scats Crusher (NWG)
- Fuel Farm (NWG)
- Water Treatment Plant (NWG)
- Pit Workshop (MCL)
- Pit Fuel Farm (MCL)
- Development Site Workshop (MCL)
- Development Site Fuel Farm (MCL)
- Favona Workshop (Leighton)
- Favona Fuel Farm (Leighton)
- Favona Portal Entrance (Leighton)
- Favona Decline – Underground (Leighton)

Spill kits are clearly identifiable (yellow bins) and display clean-up instructions. They contain socks, pillows, pads, and drain mats, as well as material to plug leaks (Plug n’ Dike). Some also hold absorbent booms. It is up to each department/contractor to keep their spill kits up to date and restocked. The Environment Department conducts monthly checks to ensure bins are adequately stocked.
Spill response equipment is also carried by contractor drill rigs, Favona generator service vehicles, and a number of Leighton and MCL heavy and maintenance vehicles. Bulk supplies can be ordered immediately from Process Lubricants for very large spills.

**Reporting of Spills**

For spills less than 20L, a number of basic details including liquid type, volume, vehicle/plant number and cause are required to be recorded for monthly reporting to the Environmental Department.

For larger spills, over 20L, supervisors must be informed and an Incident Report (NWO-INT-011-SYS-F1) is required to be completed on the same day.

**Contaminated Soil**

The aim is to encourage natural degradation of hydrocarbons and prevent leaching of hydrocarbons from contaminated soils to silt ponds or the underdrainage system. Hydrocarbon films on site water bodies may (for example, in the event of storm overflows) result in river contamination and breach of resource consent.

Hydrocarbon contaminated soil may be disposed to the Development Site under controlled conditions as described below.
- Soil and waste rock must be treated with super-phosphate fertiliser and 'drip-fed' onto the conveyor to the Development Site.
- Super-phosphate fertiliser should be applied to contaminated soils as soon as possible. Super-phosphate can be obtained locally from Edwards Transport.
- Processing or disposal of contaminated ore must be discussed with the Mill Manager prior to movement.
- Contaminated soils from other company managed areas for disposal to the development site must be reported to NWG Development Site staff beforehand.

### 13. MONITORING & MEASUREMENT

All areas of hydrocarbon storage and/or use, including contractor facilities, must be routinely inspected to verify that hydrocarbon management complies with this plan and ensure that housekeeping of hydrocarbon products is of a high standard.

The Environmental Department inspect all NWG and contractor workshop and refuelling areas on site as part of a scheduled inspection regime. Spill
Kits (NWO-ENV-009-F1) are checked monthly or more frequently if required.

Other NWG inspections that include areas of hydrocarbon storage or use are:
- Management Inspections
- Inspection and Drainage of Diesel Storage Facility
- Waste Management Plan (NWO-ENV-017-SYS-M34)
- Chemical delivery supervision (NWO-ENV-032-SYS-F1)
- Environmental Inspection

The Environmental and Business Departments conduct annual reviews of contractors involved in the transport and disposal of hydrocarbon materials to ensure they are complying with relevant corporate standard and legal requirements.

The following information is available from companies that transport hydrocarbon products on request:
- Dangerous goods licenses and evidence that their drivers are appropriately trained.
- Environmental Policy that demonstrates their commitment to environmental management.
- Copy of procedures and/or management plans on request covering: Emergencies, incident and accident reporting and spill management.

**Hydrocarbon Accounting System**

Hydrocarbon balances are maintained for all hydrocarbons on site, including those used by contractors:
- Balance of hydrocarbon products in bulk storage facilities (Stores - monthly)
- Volume booked out of store (for contractors, amount bought to site) (Stores - as & when);
- Waste volumes in storage (Stores - as & when);
- Waste volumes shipped off site (Stores - as & when);
- Losses as spillage (Incident Database); and
- Incident reference for spillages (Incident Database).

Hydrocarbon balances are used by the Environmental Coordinator for production of the site’s Data Acquisition Workbooks.

**14. TRAINING**

All employees including contractors are made aware of hydrocarbon management including spill response procedures, clean up equipment and
its contents through induction, toolbox meetings or, where applicable, as part of formal training connected to their job.

It is the responsibility of each supervisor to ensure that staff are knowledgeable in hydrocarbon management and are provided with the appropriate instruction and supervision.

Mines Rescue Team

The Mines Rescue Team is trained in chemical and hydrocarbon containment procedures (HazChem). This training utilises diverse containment and clean up products and includes trial call-outs to emergency situations. The team is capable of responding to significant spills, implementing safety procedures, containment, and clean-up. These may include engineering works, pump utilisation and evacuation protocol.

15. IMPROVEMENTS

A new hydrocarbon storage shed has been constructed to contain both unused and waste hydrocarbon products in a covered and bunded facility.

In addition Martha pit refuelling and wash-bay facilities have been relocated. This has provided an opportunity to incorporate Newmont Environmental Standards and improve drainage and design to ensure continuing compliance.