



Appendix G

Conceptual model



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| Potential Source | Anticipated contaminants | Pathway | Critical Receptors | Comments |
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| Sheep Dip (A8a) | Predominantly heavy metals and OCPs | Dermal, ingestion, inhalation, permeation through soil, groundwater and surface run off and leaching and uptake. | Adjacent site users, construction and maintenance workers, Groundwater and Surface water | The historic photos definitely show an elongated feature at the front of the farm property and could have potentially been a sheep dip |
| Orchards near Oteha Valley Road (A10a) | Predominantly Organochlorine Pesticides (OCP) and Heavy Metals | Dermal, ingestion, inhalation, permeation through soil, groundwater and surface run off and leaching and uptake. | Adjacent site users, construction and maintenance workers, Groundwater and Surface water | Pesticides used and spraying of orchards/crops and within greenhouses contain potentially contaminative chemicals |
| Orchards outside the Project corridor across the North Shore(A10b) | | | | |
| Oteha Valley Road crops (A10c) | | | | |
| Orchards and Greenhouses (A10d) | | | | |
| Orchards North of Oteha Valley Road (A10e) | | | | |
| Printers on Tawa Drive (A15a) | Predominantly Solvents, heavy metals | Dermal, ingestion, inhalation, permeation through soil, groundwater and surface run off and leaching and uptake. | Adjacent site users, construction and maintenance workers, Groundwater and Surface water | Makes commercial signs |
| Printers off SH18 (A15b) | | | | Commercial printers who make signs, posters and business cards. |
| Warehouse with Diesel Tank on Bush Road (A17a) | Total Petroleum Hydrocarbons (TPH), Polycyclic Aromatic Hydrocarbons (PAH) | Dermal, ingestion, inhalation, permeation through soil, groundwater and surface run off and leaching and uptake. | Adjacent site users, construction and maintenance workers, Groundwater and Surface water | Diesel tank which would likely be used for powering the sprinkler system at the site. |
| Substation at Constellation Drive (B4a) | Predominantly PCBs, mercury and asbestos | Dermal, ingestion, inhalation, permeation | Adjacent site users, construction and maintenance | Substation which was built in the 60's/70's and is likely to contain or has contained PCBs. |



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| Landfill Gas Power Station (B4b) | | through soil, groundwater and surface run off and leaching and uptake. | workers, Groundwater and Surface water | Gas power station which is likely not to be in use currently. However it is unknown. |
| Electroplating on Omega Street (D3a) | Predominantly Heavy Metals including Hexavalent Chromium, asbestos, VOCs and SVOCs. | Dermal, ingestion, inhalation, permeation through soil, groundwater and surface run off and leaching and uptake. | Adjacent site users, construction and maintenance workers, Groundwater and Surface water | |
| Cement Works (E3a) | Predominantly PAHs, Heavy Metals, PCBs, Dioxins, VOCs and some hydrocarbons | Dermal, ingestion, inhalation, permeation through soil, groundwater and surface run off and leaching and uptake. | Adjacent site users, construction and maintenance workers, Groundwater and Surface water | Cement plant at the end of Cowley Place and adjacent to the Oxidation Ponds |
| Vintage Car Club workshops (F4a) | Predominantly TPH, PAH, Heavy Metals, asbestos, VOC and SVOCs | Dermal, ingestion, inhalation, permeation through soil, groundwater and surface run off and leaching and uptake. | Adjacent site users, construction and maintenance workers, Groundwater and Surface water | Potential workshops on the site of the Vintage Car Club where cars can be maintained and serviced. |
| Motor vehicle workshop (F4b) | | | | Car servicing and WOF. |
| Diesel mechanics on Cowley Place (F4c) | | | | Mechanics servicing diesel vehicles. |
| Service station off SH18 present in 1997 (F7a) | Predominantly Lead, TPH, BTEX, PAH | Dermal, ingestion, inhalation, permeation through soil, groundwater and surface run off and leaching and uptake. | Adjacent site users, construction and maintenance workers, Groundwater and Surface water | There is a chance that the petrol stations along the route may have leaked. They are all over 12 years old (apart from the Albany Caltex) and have not been investigated to assess for hydrocarbon plumes. |
| Mobil on Oteha Valley Road (F7b) | | | | |
| Caltex service station on SH18 (F7c) | | | | |
| Gull service station on Albany highway (F7d) | | | | |



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| Caltex service station Albany (F7e) | | | | |
| Rosedale Closed Landfill (G3a) | Predominantly Heavy metals, VOCs, PAH, SVOCs, asbestos and PCBs. | Dermal, ingestion, inhalation, permeation through soil, groundwater and surface run off and leaching and uptake. | Adjacent site users, construction and maintenance workers, Groundwater and Surface water | Landfill which is now closed however there is ongoing leachate, groundwater and gas monitoring. |
| Scrap metal dealer (G4a) | Predominantly heavy metals, PCBs and dioxins | | | Scrap metal dealer on Omega Street. |
| Wastewater treatment plant (G6a) | Predominantly Ammonical Nitrogen, Metals and SVOCs | Dermal, ingestion, inhalation, permeation through soil, groundwater and surface run off and leaching and uptake. | Adjacent site users, construction and maintenance workers, Groundwater and Surface water | RWWTP |
| Envirowaste transfer station (G6b) | Predominantly Heavy Metals, PAH, asbestos, OCPs | | | Envirowaste facility off Holder Place. |
| Waste Management transfer station (G6c) | | | | Waste Management transfer station off Rosedale Road. |
| Gum diggers across Albany area(la) | Predominantly Heavy Metals, PAH, Asbestos, Semi Volatile Organic Compounds (SVOCs). Each area of investigation should take account the location and site specific history before analysing the above contaminants and assess whether any contaminants not mentioned above should be assessed. | Dermal, ingestion, inhalation, permeation through soil, groundwater and surface run off and leaching and uptake. | Adjacent site users, construction and maintenance workers, Groundwater and Surface water | An internet search identified that gum diggers were prevalent in the Albany area around the late 1800's and early 1900's. |
| Fill for causeway between ponds(lb) | | | | The fill used is likely to have come from an unknown source. |
| Infilling of cut(lc) | | | | |
| Stockpiles of unknown fill next to ponds(ld) | | | | |
| Bridge/elevated area made from fill(le) | | | | |
| Backfilled sheep dip(lf) | | | | |
| Filling of gullies/channels around Albany(lg) | | | | |
| Unknown fill from housing development(lh) | | | | |



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|--|--------------------------|---------|--------------------|---|
| Gully/channel infilled(Ii) | | | | |
| Filling of gullies and streams around Tawa drive and Cowley Place(Ij) | | | | |
| Earthworks for Unsworth Heights(Ik) | | | | For the residential development there may have been fill used from an unknown source. |
| Dumping area at McClymonts Road(II) | | | | Aerial photos from 2002 identified dumping of waste on the property. |
| Contaminated pond and waterway(Im) | | | | A pond/stream which used to be a tributary of the Oteha Stream potentially could be contaminated with Leachate from the landfill. |
| Infill of stream near landfill (In) | | | | |
| Fill from the construction of the road (Io) | | | | Fill from an unknown source may have been used to construct different parts of the northern corridor route |
| Landworking and demolition of the Ski slope and associated buildings(Ip) | | | | Materials may have been used for the construction of the ski slope and associated buildings resulting in contamination during demolition. |
| Fill from unknown sources up to 12m in depth(Iq) | | | | Fill identified in geotechnical reports during assessment for commercial properties |
| Fill from unknown sources (Ir) | | | | Fill identified during assessment of ground off Rosedale Road for commercial buildings |
| P Labs in Kiwi Self Storage(Is) | | | | Three Clandestine labs within the Kiwi Self Storage units |