

| Nature of Effect                                     | Magnitude of Effect   | Proposed Monitoring and Mitigation Measures   |
|--|---|---|
| <b>Effects on Groundwater Quality</b>                | More than minor (elevated nitrogen levels in groundwater in vicinity of Kepler Block) | <p>Adopting maximum rates of discharge to suit conditions</p> <p>Manage the effluent irrigation, soil and pasture to minimise the load that reaches the groundwater, in ways to be specified in the EMP.</p> <p>To assess the extent of the plume and concentration of nitrogen and indicator bacteria in the groundwater through the groundwater monitoring programme to be detailed in the EMP.</p> <p>In the event that the monitoring results indicate the nitrogen concentrations in the plume are greater than the predicted results, the SDC will investigate mitigation measures and report the findings of the investigations to Environment Southland. Higher than predicted concentrations will result in a range of adaptive management options to further mitigate effects on groundwater quality, to be described in the EMP.</p> |
| <b>Effects on Surface Water Quality</b>              | Less than minor   | <p>Adopting maximum rates of discharge to suit conditions</p> <p>Manage the effluent irrigation, soil and pasture to ensure that surface runoff is avoided and to minimise the load that reaches the groundwater in ways to be specified in the EMP.</p> <p>To determine whether a groundwater flow path exists towards Lake Manapouri.</p> <p>If monitoring results indicates existence of flow path, bio-monitoring programme in Lake Manapouri will be undertaken in ways described in the EMP.</p>  |
| <b>Effects on Odour</b>                              | No more than minor  | <p>A series of escalating measures will be available to mitigate odour emissions and drift to minimise odour effects, to be described in the EMP.</p> <p>Mitigation measures will address odour emissions and drift, such as limiting the concentration of hydrogen sulphide in the treated wastewater prior to irrigation.</p> <p>To align with standard odour compliance procedures including register recording the name, date, time, cause of the odour and action taken to address the issues, which will be specified in the EMP.</p>   |
| <b>Effects on Visual Amenity Values</b>              | No more than minor  | None required   |
| <b>Effects on Aquatic and Terrestrial Ecosystems</b> | Less than minor, based on assessment of effects on water quality                      | None required   |
| <b>Effects on Cultural Values</b>                    | Positive effect – cessation of discharge to the Upukeora River                        | None required   |