A9 DUALLING
PERTH TO INVERNESS

Appendix A10.3

Groundwater Assessment

TRANSPORT SCOTLAND
CÒMHDHAIL ALBA

ATKINS mouchel

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1. Introduction

1.1.1. This report forms a technical appendix to the A9 Dualling Tomatin – Moy Stage 3 Environmental Statement, Chapter 10: Geology, Soils and Groundwater.

1.1.2. This assessment considers the impact of the Proposed Scheme on groundwater aquifers and groundwater dependent receptors, including private water supplies, groundwater dependent terrestrial ecosystems (GWDTEs) and surface waters.

1.1.3. The primary mechanism of impact is through the excavation of road cuttings. Road cuttings have the potential to affect groundwater flow, groundwater levels and increase the vulnerability of localised aquifers to contaminants as overlying material is removed. Where road cuttings penetrate into the groundwater table this results in permanent change to local groundwater levels and flow patterns, directly impacting the aquifer and indirectly affecting local groundwater dependent receptors. Groundwater levels change seasonally and cuttings that penetrate close to the groundwater table may have seasonal impact i.e. during wet periods when the groundwater table rises above the base of the cutting.

2. Approach and Methods

2.1. Aquifer Assessment

2.1.1. An assessment has been undertaken on each cutting in the proposed route to assess the potential impacts.

2.1.2. The location of each road cutting along the route was identified and the maximum depth, geology and depth to groundwater of each was established using GIS, GI and groundwater monitoring data. Hydraulic permeability values have been derived for each superficial geology unit based on infiltration test results from the GI or from literature values. Groundwater levels have been determined by interpolating or extrapolating local GI data, where available, and from historic borehole logs.

2.1.3. To determine the likely impact of the road cuttings on groundwater flows and groundwater levels, the drawdown distance/area of influence has been calculated for each cutting that is likely to intercept groundwater.

2.1.4. At present there is no published formula for the radius of influence from linear features such as cuttings. Therefore, the method for estimating the distance of influence of individual road cuttings has been based on the widely used empirical formula for calculating the radius of influence of point groundwater abstractions, as presented in CIRIA report C515 Groundwater Control[i].

2.1.5. The radius of influence for a given drawdown and hydraulic conductivity is given by the Sichardt equation:

$R_0 = Ch\sqrt{k}$

where R_0 = distance/radius of influence (m), k = hydraulic conductivity (m/sec), h = drawdown in groundwater level (m) i.e. penetration of the cutting beneath the water table and C = 2000 for linear flow, where C is a constant.

2.1.6. The method has inherent uncertainties as it does not account for the direction of the cutting relative to the groundwater flow direction. The calculations depend on an empirical constant (C = 2000 for linear flow) for which a conservative value has been used, which may result in an overestimation of the radius of influence.

2.1.7. In each case the radius of influence has been calculated for the deepest part of the cutting, where it would have the greatest impact on the groundwater table. This radius was then applied along the entire length of the cutting to derive the full zone of influence. This method is likely to overestimate the groundwater drawdown in shallower parts of each cutting, and is considered a conservative but pragmatic approach.

2.1.8. Following the estimation of the radii of influence, a qualitative assessment has been undertaken of the impact on the aquifer(s) affected by each cutting, based on the criteria set out in Section 2.5 below.

2.2. Private Water Supply Assessment

2.2.1. Groundwater dependant water supplies, operations and abstractions have been identified within the study area, as detailed below:

- known groundwater abstractions - boreholes and springs, within 850m of the Proposed Scheme as per SEPA WAT-RM-11 guidance[ii]
- surface water abstractions - within 850m of the Proposed Scheme, as per SEPA guidance
- quarries - within 450m of the Proposed Scheme, as per SEPA guidance

2.2.2. The location of these features was then compared with the estimated radii/area of influence associated with each cutting. Any features which have been found to be within the calculated zone of influence are considered to be potentially at risk of being impacted by the cutting.

2.2.3. A qualitative assessment of the impact magnitude and significance has been carried out for each affected feature, based on the criteria presented in Section 2.5.

2.3. Surface Waters Assessment

2.3.1. Surface water features within 250m of cuttings (as per SEPA Guidance Note 31[iii]) have been identified, including:

- Rivers.
- Streams (named or unnamed).
- Land drains.
- Dam features.
- Ponds.

2.3.2. The location of these features was then compared with the estimated radii/area of influence associated with each cutting. Any features which have been found to be within the calculated zone of influence are considered to be potentially at risk of being impacted by the cutting.

2.3.3. A qualitative assessment of the impact magnitude and significance has been carried out for each affected feature, based on the criteria presented in Section 2.5.

2.4. GWDTE Assessment

2.4.1. SEPA LUPS Guidance Note 31 sets out the method for identification of GWDTEs, based on National Vegetation Classification (NVC) communities.

2.4.2. NVC surveys were carried out in May 2016, February and June 2017, based on previous potential GWDTE areas identified from Phase 1 habitat surveys carried out in the DMRB Stage 1 assessment. This NVC survey information is presented in Chapter 12: Ecology and Nature Conservation, and its associated appendices and figures.

2.4.3. The SEPA guidance recommends that buffers of 100m from excavations less than 1m deep, and 250m from excavations greater than 1m deep are applied to identify GWDTEs which may be at risk from associated groundwater changes. As the depth of proposed cuttings is greater than 1m in depth for the majority of the Proposed Scheme, a 250m buffer was used for the entire route for NVC surveys.

2.4.4. A small number of NVC communities were screened out. Areas have been screened out where borehole or trial pit information indicates the groundwater is sufficiently deep not to influence vegetation. This information has been provided from ground investigation logs and groundwater monitoring from the Stage 2 Advanced Ground Investigation works[iv] (August 2015), Stage 3 Preliminary Ground Investigation works[v] (August 2016) and Stage 3 Supplementary Ground Investigation works[vi] (March 2017). Other communities have been screened out where it can be demonstrated there is a lack of hydrogeological connectivity between the area and the scheme, such as an intervening watercourse or railway line.

2.4.5. A number of areas were identified which were not likely to be groundwater dependent as they are associated with bog or wet heath habitats. These communities include M15 (b, c and d), M16 and M25, located in areas with a peat or clay depth greater than 0.5m, where there is unlikely to be any groundwater connectivity. These communities were subsequently screened out of further assessment.

2.4.6. The groundwater dependency for each community screened in was then qualitatively assessed and revised where appropriate. This baseline assessment considered the likely contribution of rainfall, groundwater and surface water flows to each habitat, based on site walkover observations, NVC target notes, aerial imagery, LIDAR data, topographic survey data, floodplain mapping, geological and soils mapping and GI data including groundwater monitoring.

2.4.7. The sensitivity of each GWDTE habitat polygon has been evaluated based on this revised groundwater dependency for each NVC community and using the sensitivity criteria set out in Table A2.1. It should be noted that the criteria result in NVC communities of high groundwater dependency being assigned a sensitivity of Very High, moderate groundwater dependency communities are considered High sensitivity, and low dependency communities are considered of Moderate sensitivity. NVC communities with no groundwater dependency are assigned a Low sensitivity, and given their lack of groundwater dependency are excluded from the GWDTE impact assessment.

2.4.8. A detailed risk assessment has been carried out for each GWDTE habitat polygon with a sensitivity of Moderate or greater (i.e groundwater dependency of low or greater). The following impacts on each GWDTE have been assessed:

- Direct loss of GWDTEs under the footprint of the Proposed Scheme.
- Indirect loss of GWDTEs where groundwater levels may change as a result of dewatering from cuttings.

- GWDTEs located downslope of new infrastructure such as cuttings and embankments where subsurface flows may change. Impacts on these areas are discussed qualitatively.

2.4.9. Where significant impacts from indirect losses as a result of dewatering and changes to sub-surface flows are identified outline mitigation measures are provided. It should be recognised that there is no practical mitigation for direct loss under the footprint of the scheme. The residual effect on each GWDTE habitat is evaluated taking into account the proposed mitigation.

2.4.10. Finally, the individual impact assessment results are summarised and aggregated, with a qualitative assessment undertaken of the overall impact of the Proposed Scheme on GWDTEs within the study area as a whole. The overall impact on the affected GWDTEs has been assessed on the basis of the criteria presented in Section 2.5.

2.5. Impact Assessment Criteria

2.5.1. The assessment of significance of impacts in relation to groundwater and groundwater dependent features has been based on the guidance provided in the DMRB, Volume 11, Section 3, Part 10, HD 45/09 Road Drainage and the Water Environment[vii].

2.5.2. Application of the DMRB/EIA guidance has involved consideration of the importance/sensitivity of relevant attributes of the groundwater receptors and evaluation of the magnitude of the impact. Importance/sensitivity has been evaluated taking into account quality, rarity, scale and substitutability in keeping with the DMRB guidance and using the criteria shown in Table A2.1.

Table A2.1: Criteria for Determination of Sensitivity for Groundwater Receptors

Sensitivity	Description
Very High	Groundwater aquifer(s) with very high productivity or WFD good groundwater quality and quantity status. Exploitation of groundwater resource is extensive for public, private domestic and/ or agricultural use (i.e. feeding ten or more properties) and/ or industrial supply. Important sites of nature conservation dependent on groundwater as per importance criteria or groundwater is considered likely to support wetland vegetation which is highly groundwater dependent. Surface water features with hydrological importance to designated sensitive ecosystems of national/ international importance.
High	Groundwater aquifer(s) with moderate/ high productivity or WFD good groundwater quality and quantity status. Exploitation of groundwater resource is not extensive (i.e. private domestic and/ or agricultural supply feeding less than ten properties). Local areas of nature conservation dependent on groundwater as per importance criteria, or groundwater is considered likely to support wetland vegetation which is moderately groundwater dependent. Surface water features with hydrological importance to sensitive ecosystems of regional importance.
Medium	Groundwater aquifer(s) with low productivity or WFD variable groundwater quality and quantity status. No current known exploitation of groundwater as a resource and aquifer(s) properties make potential exploitation appear unlikely. Minor areas of nature conservation with a degree of groundwater dependency, as per importance criteria.

Sensitivity	Description
	Surface water features with some but limited hydrologic importance to sensitive or protected ecosystems of authority area importance.
Low	Groundwater aquifer(s) with very low productivity or WFD poor groundwater quality and quantity status. No known past or present exploitation of groundwater aquifer(s) as a resource. Areas of vegetation with no groundwater dependency. Surface water features with minimal/ insignificant hydrological importance to sensitive ecosystems of less than authority area importance.

2.5.3. Magnitude has been determined by taking into account the extent of loss and effects on integrity of an attribute in keeping with the DMRB guidance and using the criteria shown in Table A2.2.

Table A2.2: Criteria for Determination of Magnitude for Groundwater Receptors

Magnitude	Description
Major	Major or long term change to groundwater aquifer(s) flow, water level, quality or available yield, i.e. a cutting drawdown radius of influence of greater than 100m Groundwater resource use is irreparably impacted upon, with a major or total loss of an existing supply or supplies. Changes to water table level or quality would result in a major or total change in or loss of a groundwater dependent area, where the value of a site would be severely affected. Changes to groundwater aquifer(s) flow, water level and quality would result in major changes to groundwater base flow contributions to surface water and/ or alterations in surface water quality, resulting in a major shift away from baseline conditions such as change to WFD status. Dewatering effects create significant differential settlement effects on existing infrastructure and buildings.
Moderate	Moderate changes to groundwater aquifer(s) flow, water level, quality or available yield, i.e. a cutting drawdown radius of influence of between 50m and 100m. Groundwater resource use is impacted slightly, but existing supplies remain sustainable. Changes to water table level or quality would result in partial change in or loss of a groundwater dependent area, where the value of the site would be affected, but not to a major degree. Changes to groundwater aquifer(s) flow, water level and quality would result in moderate changes to groundwater base flow contributions to surface water and/ or alterations in surface water quality, resulting in a moderate shift from baseline conditions that may be long-term or temporary. Dewatering effects create moderate differential settlement effects on existing infrastructure and buildings.
Minor	Minor changes to groundwater aquifer(s) flow, water level, quality or available yield, i.e. a cutting drawdown radius of influence of between 50m and 100m. Changes to water table level, quality and yield result in little discernible change to existing resource use. Changes to water table level or quality would result in minor change to groundwater dependent areas, but where the value of the site would not be affected. Changes to groundwater aquifer(s) flow, water level and quality would result in minor changes to groundwater base flow contributions to surface water and/ or alterations in surface water quality, resulting in a minor shift from baseline conditions (equivalent to minor but measurable change within WFD status).

Magnitude	Description
	Dewatering effects create minor differential settlement effects on existing infrastructure and buildings.
Negligible	Very slight change from groundwater baseline conditions, approximating to 'no change' conditions, i.e. a cutting drawdown radius of influence of less than 20m. Dewatering effects create no or no noticeable differential settlement effects on existing infrastructure and buildings. No measurable impact upon an aquifer and risk of pollution from spillages <0.5%.

2.5.4. The evaluation of significance has been derived by combining the sensitivity of the affected attributes and the magnitude of the impacts using the matrix recommended in the DMRB HD 45/09 guidance[vii], which is replicated in Table A2.3. Where the significance is shown as being one of two alternatives, a single description is provided based on reasoned judgement.

Table A2.3: Criteria for Determination of Significance for Groundwater Receptors

Significance		Magnitude			
		Major	Moderate	Minor	Negligible
Sensitivity	Very High	Very Large	Large / Very Large	Moderate / Large	Neutral
	High	Large / Very Large	Moderate / Large	Slight / Moderate	Neutral
	Medium	Large	Moderate	Slight	Neutral
	Low	Slight / Moderate	Slight	Neutral	Neutral

3. Aquifer Assessment

3.1. Introduction

3.1.1. There are 149 locations along the scheme corridor where a cutting is proposed. An overview of the cutting locations is presented on Figure 10.5. Individual IDs were assigned numerically to each cutting from south to north. It should be noted however that due to design iterations some cutting IDs are no longer used, and newer cutting IDs appear out of sequence. Cutting start and end points are defined by mainline chainages.

3.1.2. The existing ground surface levels have been initially taken from Digital Terrain Model (DTM) data covering the area of the scheme. The maximum depth of each cutting has been calculated from the proposed cutting slope angles and the width of the cutting. The depths of the cuttings on the mainline were cross-checked on the engineering cross-sections.

3.2. Groundwater Levels

3.2.1. Groundwater levels have been determined from December 2016 and January 2017 ground investigation data, these being considered representative of a winter-high groundwater table. In all cases where groundwater level information is available, the deepest penetration of the cutting into the groundwater has been taken to provide a worst-case estimate of impact.

3.2.2. The depth to groundwater at most cuttings has been estimated by interpolating or extrapolating the groundwater levels recorded at a relatively small number of groundwater monitoring boreholes in early December 2016 and January 2017 (see Table A3.1 for groundwater elevation data recorded between August 2016 to September 2017). The method used for interpolating the groundwater levels was kriging. As the scheme is a linear feature and all monitored locations are along the alignment, it is considered that the uncertainties associated to any interpolation method would be comparable. The interpolated or extrapolated groundwater levels have been projected through the creation of a grid file using the program Surfer, which has been then imported into GIS. The GIS layer has then been interrogated to determine the groundwater depth at the deepest part of each cutting.

3.2.3. For the cuttings, where there is a groundwater monitoring point at the location, or immediately nearby, the recorded depth to groundwater has been used in the assessment. Additionally, surface elevations of prominent surface water features have also been considered when extrapolating groundwater levels. Where there is no groundwater level data available and no significant surface water features, a conservative groundwater level estimate of 1.0mbgl has been utilised in the assessment.

3.3. Drawdown

3.3.1. Estimations of drawdown have been produced by subtracting the projected groundwater levels (mAOD) from the cutting base elevations. All cuttings proposed within the scheme were considered as part of the assessment initially, however. cuttings where the groundwater level is considered likely to be deeper than the base of the cutting were considered to pose no significant risk of affecting groundwater and were screened out from further assessment.

Table A3.1: Borehole Rest Water Level Data (mAOD) from August 2016 to September 2017

Borehole	Easting	Northing	Aug-16	Sep-16	Oct-16	Dec-16	Jan-17	Mar-17 to Apr-17	Jun-17	Aug-17	Sep-17
BHTM3001	280015	829662		283.33	283.45	283.28	283.40	283.60	283.58	283.42	283.40
BHTM3002	280088	829704	283.58	283.10	283.19	283.05	283.11	283.27	283.27	283.15	283.13
BHTM3006	279839	829702	287.48					Dry	Damp	Dry	Dry
BHTM3008	279914	829841						Dry	Dry	Dry	Dry
BHTM3010	279742	829830	290.67	289.57	289.18	290.13	291.37	291.34	291.05	290.80	291.03
BHTM3011	279789	829852	289.50	289.11	289.11	289.27	290.19	290.23	289.20	289.83	290.04
BHTM3014	279841	829883	283.50	282.93	283.03	282.86	283.00	283.26	283.23	283.02	283.00
BHTM3016	280004	829928	276.67								
BHTM3017	279802	829922	288.14	287.64	287.86	287.93	288.62	288.64	288.62	288.29	288.63
BHTM3030	279430	830642	286.93	286.46	286.56	286.51	287.44	287.48	287.45	287.18	287.10
BHTM3039	279414	831049	296.66	295.67	295.32	295.58	298.43	298.56	297.44	296.41	297.19
BHTM3041	279550	831121	275.87	275.63	275.73	275.95	275.97	276.00	275.85	275.72	275.95
BHTM3046	279392	831506	293.99	293.80	292.09	293.97	294.19	294.30	294.24	294.21	294.10
BHTM3048	279395	831761	287.02	286.75	287.02	287.01	287.01	286.98	287.31	287.32	287.31
BHTM3065	278640	832225	275.20								
BHTM3074	278294	832863	272.12	271.65	271.55	271.27	272.48	272.71	272.60	272.13	272.01
BHTM3078	278029	833083	285.31	284.86	285.14	285.10	285.13	285.16	285.05	285.11	285.13
BHTM3079	277953	833137							286.65	286.74	286.80
BHTM3082	277974	833177	287.98	286.84	287.92	287.97	288.03	287.99	287.95	287.94	287.98
BHTM3083	277928	833217	290.41	290.73	290.96	290.98	291.03	291.03	291.03	291.09	291.16
BHTM3089	277607	833475		307.74	307.65	308.15	308.17	306.60	306.88	308.54	308.28
BHTM3095	277076	833897	293.49	293.37	293.66	293.67	293.65	293.72	293.70	293.71	293.74

Borehole	Easting	Northing	Aug-16	Sep-16	Oct-16	Dec-16	Jan-17	Mar-17 to Apr-17	Jun-17	Aug-17	Sep-17
BHTM3098	276938	833950		298.11				Dry	298.40	298.41	298.42
BHTM3100	276904	833972	292.07	291.88	291.98	291.89	292.38	292.34	292.29	292.09	292.24
BHTM3107	276578	834108	295.76	294.75	295.70	295.72	295.79	294.95	295.79	295.79	295.83
BHTM3111	276374	834274	288.61	288.14	288.36	288.39	288.73	288.78	288.62	288.59	288.78
BHTM3114	276230	834341		299.21	297.60	298.02	299.59	299.58	299.56	299.55	299.59
BHTM3117	276269	834400	294.67	294.07	294.24	294.23	294.59	294.48	294.34	294.28	294.31
BHTM3127	275809	834533		287.90	287.99	287.97	288.20	288.27	288.32	288.34	288.48
BHTM3145	274863	834729	290.29	289.80	289.92	289.96	289.62	290.36	290.19	290.30	290.47
BHTM3150	274517	834818	307.19								
BHTM3159	273626	834681	311.61	311.36	311.61	311.59	311.66	311.66	311.59	311.63	311.67
BHTM3201	278417	832463	275.33								
BHTM3221	279423	830496	282.22		282.04	281.99	285.14	284.09	282.95	282.04	283.11
BHTM3222	278958	832052	272.03	271.64	271.91	271.76	272.26	272.33	271.76	271.86	272.07
BHTM3225	276438	834223	288.59	287.50	286.86	286.83	288.45	288.33	288.68	288.35	288.45
BHTM3226	275047	834752	288.51	288.14	288.36	288.39	288.53	288.51	288.43	288.50	288.55
BHTM3227	274006	834683		301.37	301.54	301.54	301.58	301.72	301.56	301.72	301.81
BHTM3228	279878	829772									
BHTM3229	278528	832638							273.13	272.90	273.18
BHTM3230	276883	834029							287.39	287.12	287.27
BHTM3231	276965	834099						281.26	280.67	280.54	280.75
BHTM3232	277008	834114							276.75	277.35	277.95
BHTM3232A	276977	834135							274.56	274.19	274.51
BHTM3232B	277007	834115							281.71	281.71	276.17
BHTM3235	276868	833989							296.18	296.65	263.04

Borehole	Easting	Northing	Aug-16	Sep-16	Oct-16	Dec-16	Jan-17	Mar-17 to Apr-17	Jun-17	Aug-17	Sep-17
BHTM3236	277725	833273							313.49	313.52	317.25
BHTM3237	277611	833401							320.12	320.59	286.98
BHTM3238	277925	833190							290.26	290.04	290.09
BHTM3239	279779	830031						279.80			
BHTM3240	276918	834061						286.12	286.04	285.82	285.87

3.4. Permeability

3.4.1. Hydraulic permeability of the ground, defined by the nature of the geology in the area, could be highly variable. This observation has been confirmed by the variable results from the in-situ permeability testing.

3.4.2. Where data is available aquifer permeability has been estimated from ground investigation infiltration tests carried out in the course of the 2016 ground investigation (Table A3.2). The in-situ test results from the additional GI in March-April 2017 have also been used. For the rest of the cutting locations generic and relatively conservative permeability values have been used based on the nature of the ground – 10^{-4}m/s and 10^{-6}m/s depending on whether the superficial deposits in the nearest investigation holes were described as more silty or more sandy[viii] respectively.

Table A3.2: In-situ Permeability Test Results

Geology	Lithology	Permeability* (m/s)	Exploratory Hole Number
Falling Head Tests in Boreholes			
Alluvial Fan Deposits	Gravel, sand, silt and clay	1.40E-08	BHTM3065
River Terrace Deposits	Gravel, sand, silt and clay	7.80E-08	BHTM3111
Till	Diamicton	2.00E-06	BHTM3227
		Very low /impermeable	TPTM3001SA
Hummocky (Moundy) Glacial Deposits	Diamicton, sand and gravel	5.1E-09	BHTM3039
Soakaway Tests in Trial Pits			
Glaciofluvial Sheet Deposits	Gravel, sand and silt	6.57E-05	TPTM3039S
		2.90E-04	TPTM3015S
		Very low /impermeable	TPTM3040S
		4.70E-05	TPTM3058S
Glaciofluvial Ice Contact Deposits	Gravel, sand and silt	Very low /impermeable	TPTM3071S, TPTM3057S, TPTM3104S, TPTM3291S
		5.11E-05	TPTM3150S
		1.30E-04	TPTM3247AS
		3.50E-04	TPTM3258S

Table Source: Soil Engineering (2017) Draft Report on Supplementary Ground Investigation for A9 Dualling: Tomatin to Moy.

* Geometric average of three test results from March-April 2017

3.5. Results

3.5.1. Following completion of the assessment it was found that 30 of the 149 cuttings along the Proposed Scheme will intercept the groundwater table. The remaining 119 cuttings are considered to have no impact on groundwater flows and levels and have been screened out of the assessment.

3.5.2. It is anticipated that groundwater will be intercepted at the following 30 locations, shown in Table A3.3. Details are provided of the estimated drawdown and calculated radius of influence for each of the cutting locations. The impact of each cutting is also provided, with the sensitivity of the aquifer based on the BGS aquifer productivity classification of each geological deposit or formation, as discussed in the Baseline Section of Chapter 10. The magnitude and significance of each impact has been derived using the criteria set out in Section 2.5 of this document.

Table A3.3: Aquifer Impact Assessment

Cutting no.	Road Description / NGR	Approx. Chainage		NGR	Estimated Drawdown(m)	Calculated ROI (m)	Groundwater body impacted*	Sensitivity **	Magnitude	Significance
		From	To							
7	Tomatin junction- N/B sliproad	35	50	NH 79769 29853	2.1	71.9	UFSG	H	Moderate	Moderate
	Tomatin junction- S/B sliproad	0	170							
	Main A9	750	890							
8	River Findhorn Access	15	30	NH 79802 29963	1.2	0.7	Non-aquifer UFSG	L	Negligible	Neutral
	Ruthven Tomatin Link Road	60	105							
	Main A9	810	855							
10	Ruthven Tomatin Link Road	0	50	NH 79849 29948	2.2	1.4	Non-aquifer UFSG	L	Negligible	Neutral
	Tomatin Junction S/B sliproad	270	280							
	Main A9	750	790							
29	Ruthven Tomatin Link Road	982	1000	NH 79418 30745	0.1	0.1	Non-aquifer	L	Negligible	Neutral
31	Ruthven Tomatin Link Road	1185	1215	NH 79456 30950	1.1	22.0	UFSG	H	Minor	Slight
	A9	1970	2000							
43	Ruthven Tomatin Link Road	1970	2150	NH 79255 31880	3.6	72.0	UFSG	H	Moderate	Moderate
	A9	2630	3070							

Cutting no.	Road Description / NGR	Approx. Chainage		NGR	Estimated Drawdown(m)	Calculated ROI (m)	Groundwater body impacted*	Sensitivity **	Magnitude	Significance
		From	To							
50	Dalmagarry Farm Access 2	245	515	NH 78988 32119	0.7	14.0	UFSG	H	Negligible	Neutral
51	Dalmagarry Farm Access 2	565	605	NH 79149 32022	0.5	10.8	UFSG	H	Negligible	Neutral
55	Main A9	4925	5250	NH 77686 33378	2.2	1.4	Non-aquifer FBLSGA	L	Negligible	Neutral
64	Pond 6-A/B Access 1	5	115	NH 77013 34020	1.1	22.0	UFSG	H	Minor	Moderate
69	Main A9	6830	7325	NH 76127 34390	2.6	36.8	FBLSGA	H	Minor	Moderate
81	Windfarm Access Road 1	540	607	NH 72863 34803	0.7	14.1	FBLSGA	H	Negligible	Neutral
82	Windfarm Access Road 1	325	530	NH 72796 34846	1.9	38.0	FBLSGA	H	Minor	Slight
	A9	104000	104800							
86	Windfarm Access Road 1	65	75	NH 72511 35143	0.3	0.2	Non-aquifer	L	Negligible	Neutral
	Windfarm Access Road 2	95	120							
	A9	10800	10840							
87	Windfarm Access Road 2	10	60	NH 72492 35223	1.3	25.3	Non-aquifer	L	Minor	Neutral
88	Windfarm Access Road 1	0	65		0.4	0.7	Non-aquifer	L	Negligible	Neutral

Cutting no.	Road Description / NGR	Approx. Chainage		NGR	Estimated Drawdown(m)	Calculated ROI (m)	Groundwater body impacted*	Sensitivity **	Magnitude	Significance
		From	To							
	Windfarm Access Road 2	88	120	NH 72509 35154						
	A9	10815	10868							
95	Main A9	750	910	NH 79798 29925	5.1	125.2	UFSG Non-aquifer	H	Major	Large
104	Pond P6-A/B Access 1	1080	1120	NH 77788 33390	0.4	0.3	Non-aquifer	L	Negligible	Neutral
106	Pond P6-A/B Access 1	1040	1070	NH 77768 33422	0.3	6.0	Non-aquifer	L	Negligible	Neutral
124	A9	2835	2900	NH 79343 31820	1.9	37.7	UFSG	H	Minor	Slight
135	MCA1 / Dalmagarry Farm Access 3	1585	1630	NH 78452 32122	0.0	0.5	FBLSGA	H	Negligible	Neutral
136	MCMC / Dalmagarry Burn Realignment	17	23	NH 78657 32203	0.1	2.4	FBLSGA	H	Negligible	Neutral
137	MCMC / Dalmagarry Burn Realignment	145	162	NH 78777 32215	0.0	0.2	UFSG	H	Negligible	Neutral
143	A9	5375	5430	NH 77532 33572	0.1	2.6	Non-aquifer FBLSGA	H	Negligible	Neutral
147	MCX2	235	272	NH 75706 35325	0.4	7.0	UFSG	H	Negligible	Neutral

Cutting no.	Road Description / NGR	Approx. Chainage		NGR	Estimated Drawdown(m)	Calculated ROI (m)	Groundwater body impacted*	Sensitivity **	Magnitude	Significance
		From	To							
148	MCX2	205	222	NH 75689 35343	0.5	10.0	UFSG	H	Negligible	Neutral
153	MCR0 / Windfarm Access Road 1	320	440	NH 72701 34944	0.9	0.5	Non-aquifer	L	Negligible	Neutral
154	MCR0 / Windfarm Access Road 1	320	355	NH 72675 34948	0.6	0.3	Non-aquifer	L	Negligible	Neutral
156	MCR0 / Windfarm Access Road 1	35	50	NH 72549 35135	0.4	0.2	Non-aquifer	L	Negligible	Neutral
161	A9	240	330	NH 77899 33240	2.7	1.7	Non-aquifer	L	Negligible	Neutral
	* Groundwater bodies: UFSG: Upper Findhorn Sand and Gravel (WFD ID 150328) FBLSGA: Findhorn Bedrock and Localised Sand and Gravel Aquifers (WFD ID 150333) **DMRB Sensitivity Abbreviations: L = Low , M = Medium, H = High, VH = Very High									

3.5.3. The majority of the cuttings which intercept groundwater will have very little impact on the surrounding groundwater levels or flows, due to relatively small radii of influence.

3.5.4. However, Cutting 95, located at Mainline Ch.750 to 910 and associated with the Tomatin Grage Separated Junction (GSJ) underpass, will result in an impact of Large significance due to the large drawdown (over 5m) and calculated radius of influence, which is over 125m from the upslope edge of the cutting. Cutting 7, also in this area, was found to be of Moderate significance in terms of its estimated impact to groundwater.

3.5.5. A further three cuttings were found to have an impact of Moderate significance on the surrounding high productivity aquifers, located at the proposed entrance to Dalmagarry Quarry, on the Moy to Lynebeg Link Road, and on the mainline to the west of Lynebeg.

3.5.6. At detailed design further ground investigations, groundwater monitoring and assessment is required to refine the estimation of groundwater drawdown and zone of influence and confirm the significance of the impact. This data will also be required to assess the groundwater volumes seeping into the cuttings, which will inform the cutting drainage design.

3.5.7. If the impacts are confirmed as significant additional mitigation measures may be required. This may be relatively minor measures, such as containing, channelling and directing groundwater to the down gradient side of the cutting, allowing the discharge to infiltrate back to ground. However, if groundwater seepage into the cuttings is substantial, particularly those associated with Tomatin GSJ, then groundwater cut-off walls may be required.

3.5.8. With the above mitigation measures in place it is anticipated that the magnitude of impact on the associated aquifers will be reduced to Minor, resulting in a significance of Slight.

4. Private Water Supplies Assessment

4.1.1. Groundwater fed public and private water supplies within the study area have been identified, as discussed in the Baseline Section of Chapter 10, and include: a public water supply borehole at Tomatin, a private well at Invereen and spring supplies at Tomatin House, Dalmagarry and Invermoy.

4.1.2. Following review of the estimated areas of influence associated with each of the cuttings it was found that none of the identified supplies lie within these areas. Therefore no impact on groundwater flows and levels are expected at these water supply sources. The impact magnitude has accordingly been assessed to be Negligible, resulting in a significance of Neutral.

4.1.3. Cuttings 43 and 124 are located at Dalmagarry Sand and Gravel quarry, and are estimated to have a groundwater drawdown radius of influence of approx. 72m and 38m respectively. The quarry operator does not currently dewater the workings and has no CAR licensed abstractions or discharges. The impact on the quarry is therefore considered to be of Negligible magnitude and Neutral significance.

5. Surface Waters Assessment

5.1. Watercourses

5.1.1. Surface water features such as rivers and burns, which interact with groundwater via a baseflow component, may be impacted by changes in groundwater levels as a result of dewatering activities during the construction phase, and steady-state drawdown during operation. Of the 30 cuttings which are expected to have an impact on groundwater, five have been found to have watercourses within the associated zones of influence. The affected watercourses include the River Findhorn, Allt na Frithe and Dalmagarry Burn, as listed in Table A5.1 below. For each watercourse the magnitude of the impact is anticipated to be Negligible due to the small proportion of base flow that may be lost. The subsequent impact significance will be Neutral.

Table A5.1: Watercourses Found to be Within Area of or Within Zone of Influence of Cuttings

Cutting no.	Watercourse	NGR	Sensitivity	Magnitude*	Significance
7	Allt na Frithe	NH 79633 29903	High	Neg	Neutral
43	Dalmagarry Burn	NH 79126 32016	High	Neg	Neutral
51	Dalmagarry Burn	NH 79159 32015	High	Neg	Neutral
95	Allt na Frithe River Findhorn Ford	NH 79712 30028 NH 79786 30066 NH 79740 30042	High High Low	Neg Neg Neg	Neutral Neutral Neutral
136	Dalmagarry Burn	NH 78657 32206	High	Neg	Neutral

*Magnitude abbreviations: Maj: Major Adverse, Mod: Moderate Adverse, Min: Minor Adverse, Neg: Negligible

5.2. Lynebeg Ponds

5.2.1. There are two ponds at Lynebeg, identified as Pond 4 (NGR NH 768 340) and Pond 5 (NGR NH 769 340), which are located north-east of the existing A9 carriageway. The ponds are of good water quality, surrounded by conifer woodland, the land of which is primarily dry underfoot in the vicinity of the ponds.

5.2.2. As can be seen in Figure 5.1 below, the Proposed Scheme will involve the excavation of several large cuttings associated with the Lynebeg underpass in the vicinity of the ponds. Pond 4 will not be directly affected by the Proposed Scheme, however Pond 5 lies under the footprint and will be drained as a consequence (which, as a direct impact, is assessed within Chapter 11: Road Drainage and the Water Environment). It is proposed that a replacement pond will be constructed downhill of Pond 5 adjacent to the Highland Main Line Railway (HML) embankment, also requiring a large cutting.

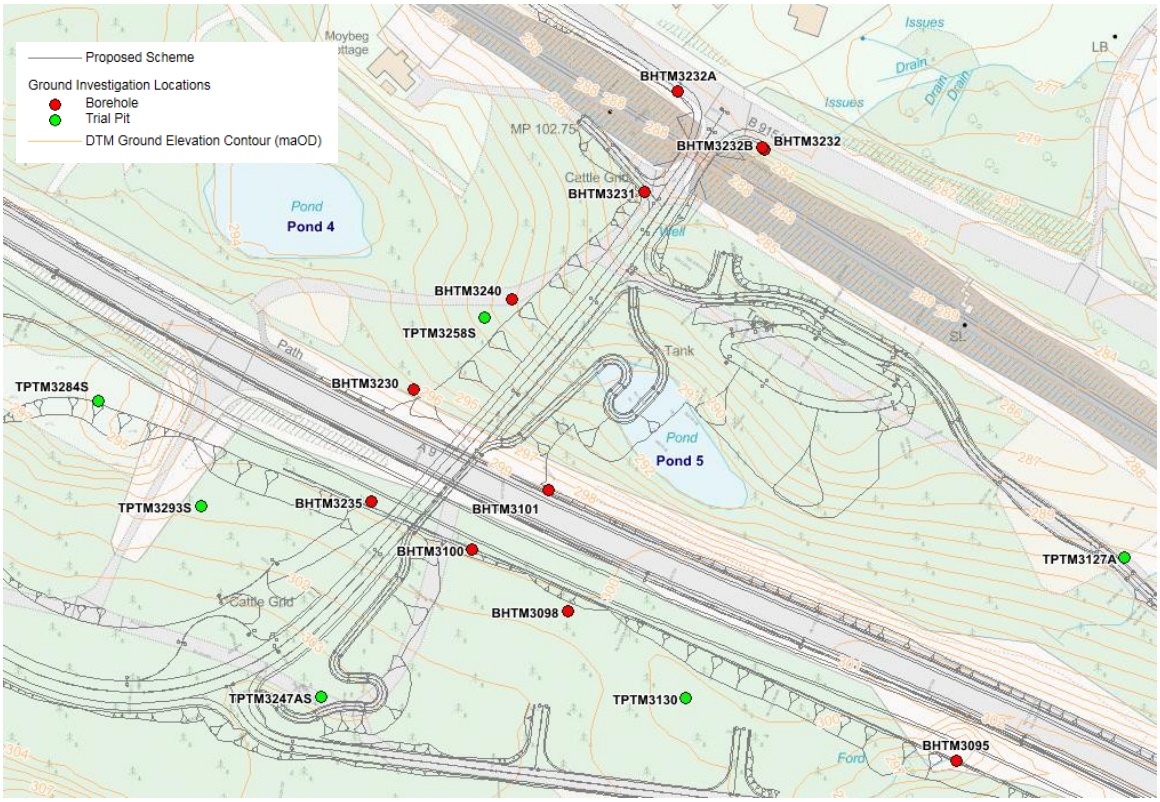

Figure 5.1: Proposed Scheme and GI locations in the vicinity of Lynebeg Ponds

5.2.3. The ponds were surveyed using the National Pond Survey methodology, as detailed in Chapter 12. The findings of these surveys found that in general the water quality of the ponds was good and that a mixed hydrological dependence was likely (i.e. fed by a combination of direct rainfall, surface water and groundwater). The aquatic ecology survey estimated the bed composition of Pond 4 to be composed of 60% peat, 35% clay/silt and 5% gravel, and the bed composition of Pond 5 - 65% peat, 25% clay/silt and 5% pebbles and 5% gravel. The survey identified an outflow from Pond 5 only (a private water supply intake chamber). Pond 5 has a surface water elevation of 291.9maOD and an estimated depth of 0.7m at its deepest point. Pond 4 has a surface water elevation of 295.9maOD and was estimated to be over 1m deep at its deepest point.

5.2.4. There are no obvious inflows or natural outflows from either pond, and the surface water catchments for each appear to be too small to sustain the ponds, therefore some dependence on groundwater was suspected.

5.2.5. Ground investigation data in the vicinity of the ponds has been analysed to try and determine the groundwater dependence of the two ponds. Two phases of ground investigation (GI) have been undertaken in the local area. The following boreholes and trial pits were drilled/excavated in July and August 2016 (locations can be seen in Figure 5.1);

- BHTM3095 (with installation)
- BHTM3098 (with installation)
- BHTM3100 (with installation)
- BHTM3101 (no installation filled in)
- BHTM3107 (with installation)
- TPTM3127A

- TPTM3130
- TPTM3136

5.2.6. A further GI was undertaken in March and April 2017 when the following boreholes/trial pits were drilled/excavated;

- BHTM3230 (with installation)
- BHTM3231 (with installation)
- BHTM3232A (no installation)
- BHTM3232B (with installation)
- BHTM3235 (with installation)
- BHTM3240 (with installation)
- TPTM3208
- TPTM3247A
- TPTM3258

5.2.7. Inspection of the borehole logs shows that ground conditions generally comprised dense and very dense sand and gravel deposits, often with low to medium cobble content. However several boreholes also recorded an increase in silt at various depths. Notably in BHTM3240, there was an increase of silt at 3.2-3.5m depth, or 287.8mOD - 287.5mAOD, and then again at 10.5m or 280.5mOD, though the descriptions do not vary from either sand or gravel throughout. Also, at BHTM3235, a slightly silty layer is described at 1.5m or 296.1mOD, and then again at 12.5m or 285.1mOD. It can be speculated that this siltier layer extends into the siltier layer at 287.8-287.5mOD in BHTM3240, and therefore extends towards the ponds also.

5.2.8. Infiltration testing was carried out in several of the trial pits, as summarised in Table A5.2.

Table A5.2: Trial Pit Infiltration Tests

Exploratory Hole ID	NGR	Elevation (maOD)	Geological Description	(Average) Infiltration rate (m/s)
TPTM3247AS	276850 833920	303.1	Gravelly fine to coarse SAND with high cobble and low boulder content	1.30E-04
TPTM3258S	276908 834054	293.07	Very gravelly fine to coarse SAND with low cobble and boulder content	3.00E-04
TPTM3284S	276771 834024	295.78	Sandy subangular to rounded fine to coarse GRAVEL with medium to high cobble content and low boulder content.	Not determined - too slow to infiltrate
TPTM3293S	276807 833987	299.26	Sandy subangular to rounded fine to coarse GRAVEL with high cobble and low boulder content.	Not determined - too slow to infiltrate

5.2.9. The nearest infiltration test to the eastern pond was undertaken at TPTM3258S, slightly north-east of BHTM3240. TPTM3258S is at a similar elevation to BHTM3240 and was dug to a depth of two metres. The test log shows no low permeability material (which is expected given the borehole log for BHTM3240) and a relatively high permeability measurement of $3x10^{-4}$m/s. The next nearest infiltration tests were undertaken in

TPTM3284S and TPTM3293S which are on the south side of the current A9 (see Figure 5.1). At these locations the infiltration tests could not be completed as the infiltration rate was too slow. The geological descriptions did not mention any low-permeability layers such as clay or silt, both describe sandy gravel, so it is unclear at this stage why these infiltration tests were unsuccessful. However, they do illustrate that, in this area, water can be held in the superficial deposits at the surface and support the theory that the ponds are suspended on low permeability layers.

5.2.10. Table A5.3 shows the average groundwater levels from all of the GI boreholes installed in the area, since August 2016 and up to July 2017. The full set of groundwater level records are presented Table A3.1.

Table A5.3: Average Groundwater Levels in Observation Boreholes around Lynebeg Ponds - August 2016 to July 2017

BH name	Easting	Northing	Ground level (mOD)	Average GWL (mOD)
BHTM3095	277076	833897	301.31	293.59
BHTM3100	276904	833972	304.99	292.09
BHTM3107	276578	834108	302.95	295.45
BHTM3231	276966	834099	283.92	281.17
BHTM3232B	277008	834116	282.61	277.46
BHTM3235	276868	833989	297.56	289.86
BHTM3240	276919	834061	290.98	286.09

5.2.11. The available groundwater level observations are not collected on a regular basis and do not cover a full year (seasonal variations). The lowest levels are recorded in September 2016 and May 2017, while the highest in January and April 2017. The highest variation is recorded in BHTM3232B and BHTM3231 – 1.93m and 1.15m drop respectively, between April and May 2017. Considering the small area of the catchment for recharge, such change in groundwater level is considered relatively significant and an indication of good infiltration properties.

5.2.12. It should be noted that BHTM3240, which is closest to and on a similar elevation as Pond 5 has an average water depth several metres lower than the surface water level in the pond. This would suggest that the groundwater recorded in the borehole is not connected to the pond.

5.2.13. Groundwater contours were interpolated from average water levels recorded in the monitoring boreholes in the area (Figure 5.2). An average hydraulic gradient of 0.07 towards north/northeast was calculated.

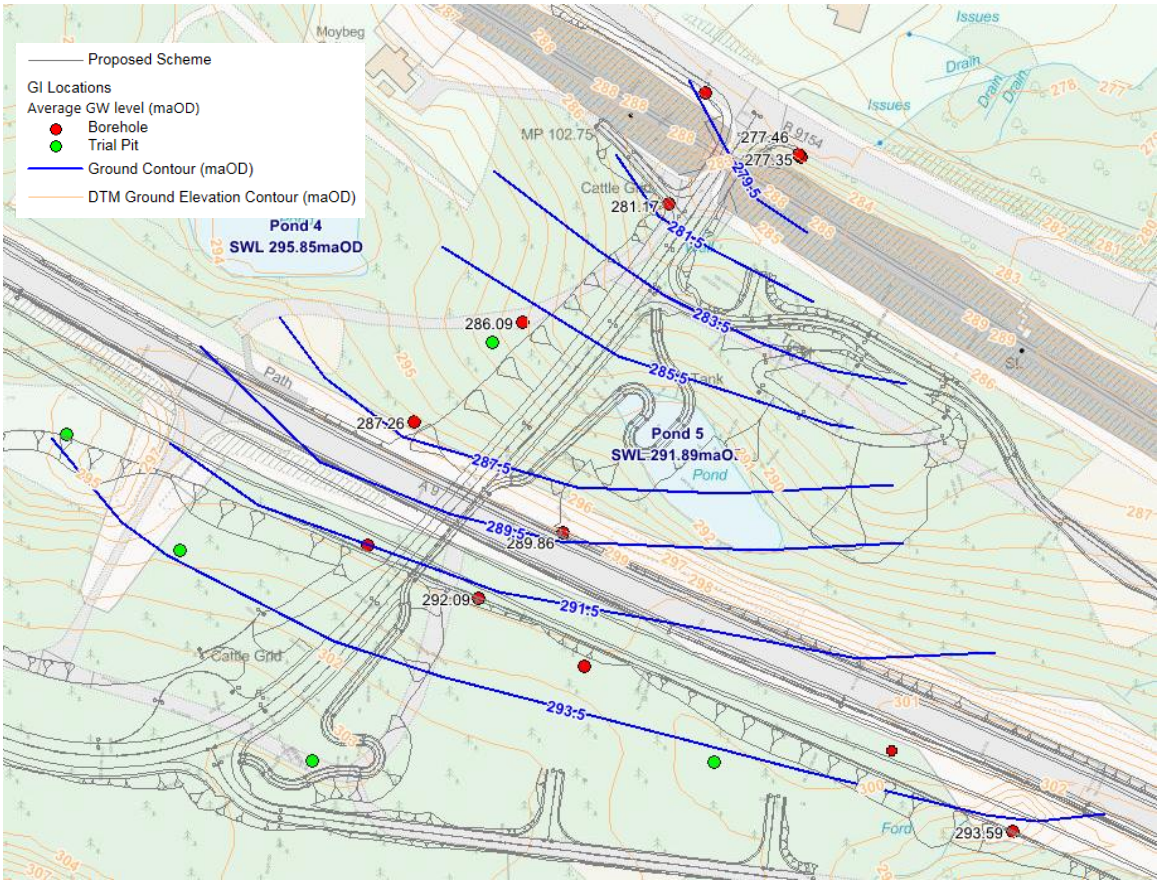

Figure 5.2: Groundwater contours for the area of the Lynebeg ponds

5.2.14. As can be seen the interpolated groundwater contours indicate that the main groundwater table is located several metres below the base of both ponds. This would suggest that the ponds are perched on a near surface impermeable layer and will be unaffected by changes to groundwater levels in the main aquifer that may come about as a result of the Proposed Scheme.

5.2.15. However the groundwater contours do also indicate that the proposed underpass/link road cuttings and the replacement pond may intersect the main aquifer. This combined with the highly variable ground conditions, as demonstrated by the infiltration test results, indicate that further investigation and assessment is required at detailed design to inform the engineering design of the cuttings and road drainage in this area, in addition to aiding in the design of the replacement pond.

6. GWDTEs Assessment

6.1. Potential GWDTEs

6.1.1. Groundwater Dependent Terrestrial Ecosystems (GWDTEs) are types of wetland which are specifically protected under the WFD and can include: fens, springs, flushes, seepages, quaking bog, wet woodland, marshy grassland and some types of wet heath, reedbed and swamp.

6.1.2. NVC surveys were carried out in May 2016, February and June 2017, with the resulting NVC map produced as a GIS layer and individual NVC communities defined by individual polygons. Further information on the survey method and general results are presented in Chapter 11: Ecology and Nature Conservation and Technical Appendix

11.2 Vegetation and Habitats. The NVC survey was reviewed for GWDTEs using SEPA guidance which indicates which NVC habitats could be potentially groundwater dependent. A total of 452 communities, covering 199 hectares, were identified as being potentially groundwater dependent within the study area. The survey results for these communities are detailed in Annex A, with the potential GWDTE communities present within the study area summarised in Table A6.1.

Table A6.1: Potential GWDTE Communities Present within 250m Study Area

NVC Community	NVC name
Highly Groundwater dependent	
M6	Carex echinata - Sphagnum recurvum mire
M10	Carex dioica - Pinguicula vulgaris mire
M16	Erica tetralix - Sphagnum compactum wet heath
M23	Juncus effusus/acutiflorus - Galium palustre rush-pasture
W4	Molinia caeruleae - Cirsium dissectum fen meadow
Moderately Groundwater Dependent	
M15	Scirpus cespitosus - Erica tetralix wet heath
M25	Molinia caerulea - Potentilla erecta mire
MG9	Holcus lanatus - Deschampsia cespitosa grassland
MG10	Holcus lanatus - Juncus effusus rush-pasture
U6	Juncus squarrosus - Festuca ovina grassland
Je	Juncus Effusus - soft rush dominated pasture community

6.1.3. It should be noted ‘Je’ refers to Juncus Effusus soft rush dominated pasture community. This is a common rush community that does not fit in any groundwater dependent NVC community, as it lacks the wetland element of M6 and M23 Juncus spp. mires and has a more acidophilous flora than MG10 Juncus Effusus rush-pasture. Although this community is not included within the SEPA guidance we consider it to be potentially moderately groundwater dependent and have therefore included it in the assessment.

6.1.4. A number of areas (62 areas) have been screened out where they are located more than 250m from the Proposed Scheme. Additionally, areas which are not hydrologically connected to the scheme (79 areas), based on the methodology described in Section 2.4, were also screened out from the assessment.

6.1.5. The remaining 311 communities, covering 141 hectares, were screened in for baseline review of groundwater dependency. A qualitative baseline assessment of the groundwater dependency of each community is provided in Table A6.2 based on the methodology described in Section 2.4, with a summary in Table A6.3. The resulting GWDTE map, based on the revised groundwater dependencies, is presented in Figure 10.7.

Table A6.2: Baseline Assessment of Groundwater Dependency of Potential GWDTE Communities

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
Z067-	MG10a	0.012	Marshy grassland habitat located along the embankment of the U2856 road, downslope of the existing A9. A drainage ditch is located immediately downslope and to the south, which flows west towards the Allt Cosach. The area is underlain by peaty gley soils and low productivity Beinn Bhreac psammite deposits. Given the lack of superficial deposits, this area is likely to be primarily fed by precipitation and surface run-off.	Moderately Dominant	Low	Medium
JM026	W4b	0.660	Area of woodland (W4b) located in a relatively flat area between the B9154 road in Moy to the south-west and the Highland Mainline Railway to the east. A small drain follows the road approx. 50m south-east of this area on the opposite side of the railway. Underlain by peaty podzols and low productivity peat and granite deposits. Due to the topography, this area is likely to be fed by a combination of surface and groundwater sources.	Highly Dominant	High	Very High
JM028	M6c/MG9	0.244	Mosaic of mire (M6c) (60%) and marshy grassland (40%) located in a relatively flat area between the B9154 road in Moy to the south-west and the Highland Mainline Railway to the east. A small drain follows the road approx. 150m south-east of this area on the opposite side of the railway. Aerial imagery shows a number of small drains within the area. Underlain by peaty podzols and low productivity peat and granite deposits. Due to the topography, this area is likely to be fed by a combination of surface and groundwater sources.	Highly Sub-dominant	Moderate	Very High
A029-	H12b/U4a/ U5a/MG9/ W17b/W17c /M6c/W11c	1.073	Mosaic of rush pasture (MG9) (19%), mire (M6c) (5%) and woodland habitats immediately downslope of the existing Tomatin South Junction, featuring steep slope angles with the Highland Mainline Railway located downslope within a cutting. Underlain by peaty soils, low productivity peat deposits and Beinn Bhreac psammite. An existing road drainage ditch is located within the north of this habitat. Due to the presence of an underlying low productivity aquifer, a combination of sources is likely to feed this area including precipitation and surface generated road run-off.	Highly Sub-dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
A038-	U4a/MG5/ BG/H12b/ MG10/W23	0.003	Mosaic of unimproved grassland, marshy grassland (MG10) (10%), woodland (W23) (5%) and heath immediately upslope and adjacent to the Highland Mainline Railway, gently sloping to the south-west. This area is underlain by peaty soils and low productivity Beinn Bhreac psammite deposits. Due to the presence of low productivity aquifers, a combination of sources is likely to feed this area including precipitation and hill run-off.	Moderately Sub-dominant	Low	Medium
W002-	H12b/M6c	1.337	Mosaic of heath and mire (M6c) (20%) located upslope of the existing Tomatin South Junction, separated by an area of conifer plantation. The area slopes gently to the south-west, and underlain by peat deposits of up to 1.2m underlain and low productivity psammite deposits. A combination of water sources are considered likely to be supplying the communities present in the area in addition to groundwater; precipitation and surface generated run-off.	Highly Sub-dominant	Moderate	High
W004-	M6c	0.108	Area of mire (M6c) located upslope of the existing Tomatin South Junction, separated by an area of conifer plantation. The hill slopes gently south-west. The area is underlain by peaty podzols and low productivity psammite deposits. Due to a low bedrock aquifer productivity, proximity to a watercourse and very thin soils; a combination of water sources are considered likely to be supplying the communities present in the area in addition to groundwater; precipitation and surface generated run-off.	Highly Dominant	Moderate	High
W005-	U5d/M6c	0.194	Mosaic of mire (M6c) (50%) and unimproved grassland located upslope of the existing Tomatin South Junction, separated by an area of conifer plantation. The hill slopes gently south-west. The area is underlain by peaty podzols and low productivity psammite deposits. Due to a low bedrock aquifer productivity, proximity to a watercourse and very thin soils, a combination of groundwater and surface water sources are considered likely to be supplying the communities present in the area.	Highly Dominant	Moderate	High
W015-	M16d/M6c /M19	0.116	Mosaic of wet heath (M16c) (50%), mire (M6c) (45%) and mire adjacent to conifer plantation and upslope of the existing A9 cutting. The area is underlain by peaty podzols, low productivity peat deposits and Beinn Bhreac psammite deposits. Due to its topographic location at the top of an existing cutting and underlain	Highly Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			by low productivity deposits, the area is likely to be fed by a combination of surface and groundwater sources.			
A388	H9-12/M6c	0.092	Mosaic of heath and mire (M6c) (1%) located along a forest ride immediately downslope of the existing A9. Ground Investigation works at the southern end of this area indicate no groundwater was encountered to a depth of 2.3m. The area is underlain by peaty podzols and low productivity Hummocky (Moundy) Glacial deposits and Dava Group semipelite. The area has been modified by artificial drainage ditches. Due to the modification of drainage, precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.	Highly Sub-dominant	Low	Medium
A377	CF>Je/ CF>H9-12/MG9	0.312	Mosaic of recently felled conifer plantation converting to rush pasture (MG9) (10%), heath and Juncus Effusus habitats, in an area sloping north-east towards an existing forestry track. Located south and upslope of an existing forestry track. Peat probing results reveal shallow soils and exposed bedrock, with Ground Investigation works at trial pit TPTM3268 encountering clayey gravel to 1.3m depth. The area features modified drainage as a result of the forestry plantation. Due to the modification of drainage and ground investigation works not encountering groundwater, this area is likely to be fed by surface water sources including precipitation and run-off.	Moderately Sub-dominant	Not GW dependent	Low
A371	Je/U4a	0.078	Mosaic of Juncus effusus (50%) and grassland adjacent to an existing forestry track and bordered by conifer forestry, gently sloping west. Peat probing results reveal shallow soils (0.14m depth) with geological mapping indicating the area is underlain by peaty podzols, low productivity Hummocky (Moundy) Glacial deposits and Dava Group semipelite. Due to the modification of the drainage within the surrounding conifer plantation, this area is likely to be primarily fed by surface run-off and precipitation.	Moderately Dominant	Low	Medium
A382	M6c/M4	0.337	Mosaic of mire (M6c) (50%) and mires along an unnamed artificial drain which flows north-east towards the Allt Creag Bheithin below the existing A9. The surrounding area features conifer plantation with modified drainage in the form of ditches which will feed this area. The area is underlain by peaty podzols, low productivity peat deposits and Dava Group semipelite deposits.	Highly Sub-dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			Due to the modification of the drainage within the surrounding conifer plantation, this area is likely to be primarily fed by surface water run-off and precipitation.			
A381	CP/M6c/Je/ M20/U4a	0.367	Mosaic of mire (M6c) (24%), conifer plantation, Juncus Effusus (24%) and unimproved grassland adjacent to the existing forestry track. The surrounding area features conifer plantation with modified drainage in the form of ditches which will feed this area. Ground Investigation at nearby trial pit TP3267 show the area is underlain by topsoil and sandy clayey gravel. Groundwater was encountered at a depth of 1.3m, rising to 0.3m after 20 minutes in gravel deposits. This area is likely to be fed by a combination of groundwater and surface water sources.	Highly Sub-dominant	High	Very High
A363	U4a/U4b/ H9-12/BG/Je	0.102	Mosaic of unimproved grassland, heathland and Juncus Effusus (2%) immediately south and downslope of the existing A9 carriageway. Located immediately upslope of recently felled conifer plantation, with the Allt Creag Bheithin flowing south-east downstream of the area. Ground Investigation works at nearby trial pit TPTM3204 immediately south-east of the area show the area is underlain by peat to 1.7m depth, with no groundwater encountered. The conifer plantation immediately north and south features modified drainage ditches. Due to the low productivity deposits, GI results and presence of modified drainage system (presence of ditches), this area is likely to be primarily fed by surface water sources.	Moderately Sub-dominant	Not GW dependent	Low
A373	CF > M19/ CF > Je	1.502	Mosaic of conifer plantation transitioning to mire and Juncus Effusus (50%) immediately upslope of the Allt Creag Bheithin, which flows south-east through an area of felled conifer plantation downslope of the existing A9. This area features numerous drainage ditches which flow in to the watercourse. Trial pit TPTM3204 indicate the area is underlain by low productivity peat deposits of 1.7m depth, with sand deposits below this. Due to the low productivity deposits, GI results and presence of modified drainage system (presence of ditches), this area is likely to be primarily fed by surface water sources.	Moderately Dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
A366	Je	0.253	Area of Juncus Effusus marshy grassland rush habitat located within an area of felled plantation north of an existing forestry track. An unnamed tributary of the Allt Creag Bheithin flows north through the area. Aerial imagery shows the presence of drainage ditches. Underlain by peaty gleys, low productivity peat and Dava Group psammite deposits. Precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.	Moderately Dominant	Low	Medium
A345	M15b	0.021	Area of mire along a previous forest ride, within an area of recently felled conifer plantation. Area slopes moderately north towards the Allt Creag Bheithin, with an existing forestry track located south and parallel to the area. Aerial imagery shows drainage ditches are present both upslope and downslope of the area, flowing towards the watercourse. Underlain by peaty gleys, low productivity Diamicton Till deposits and Dava Subgroup psammite. Precipitation and surface generated run-off from surrounding slopes are considered to be the dominant water supply mechanisms.	Moderately Dominant	Low	Medium
A323	MG9/M6c /MG10a/Je/ M4/U5a	3.194	Mosaic of rush pasture (MG9) (35%), marshy grassland (MG10a) (10%), mire (M6c) (35%) and Juncus Effusus (10%) habitats which are located within the immediate corridor of the Allt Creag Bheithin watercourse and its tributary. The area is underlain by peat deposits, up to 0.94m in depth. The surrounding valley slopes feature felled conifer plantation with artificial drainage ditches, flowing north and south towards the watercourse. Area underlain by peaty gleys, low productivity peat and Dava Subgroup psammite deposits. Precipitation and surface generated run-off from surrounding slopes, watercourses and artificial drainage ditches are considered to be the dominant water supply mechanisms.	Highly Sub-dominant	Low	Medium
A319	M19a/M25a /H9-12/U5a	0.209	Mosaic of mire (25%), heath and grassland immediately downslope of the existing A9, located between two areas of woodland at the base of the slope. The Allt Creag Bheithin watercourse flows east immediately south of this area. The area is underlain by peaty podzols, low productivity peat deposits (up to 0.8m deep in the south of the area) as well as underlying Dava subgroup psammite deposits. Due to the presence of M25a habitat within deep peat, this area is not likely	Moderately Sub-dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			to be fed by groundwater, with precipitation and surface water sources likely to be the dominant mechanisms.			
A332	U4b/MG9/ MG10a/ H9-12	0.125	Mosaic of rush pasture (MG9) (45%), marshy grassland (MG10a) (5%) grassland and heath along the embankment of the existing A9 road. The Allt Creag Bheithin flows through this area north through a culvert. Ground Investigation works at borehole BHTM3145 immediately south of this area indicate the area is underlain by peat to 0.6m, then sand and gravel deposits beneath. Groundwater was encountered at 1.2m depth. Given the low productivity of the underlying superficial deposits and recorded groundwater levels, this area is likely to be fed by a combination of surface water and groundwater sources, including road runoff, precipitation and groundwater.	Moderately Dominant	Moderate	High
A328	W4b	0.035	Area of woodland (W4b) at the base of the existing A9 embankment, immediately east of the Allt Creag Bheithin watercourse which flows north under the A9 and adjacent to existing conifer plantation to the south. Ground Investigation works at borehole BHTM3145 indicate the area is underlain by peat to 0.6m, then sand and gravel deposits beneath. Groundwater was encountered at 1.2m depth. Given the low productivity of the underlying superficial deposits, this area is likely to be fed by a combination of surface water and groundwater sources, including road runoff, precipitation and groundwater.	Highly Dominant	Moderate	High
A326	W7c	0.228	Area of broad leaved woodland (W7c) located in a flat area along the Allt Creag Bheithin watercourse, downslope and south of the existing A9. Underlain by peaty podzols, moderate to high productivity alluvium deposits and low productivity Dava Group psammite deposits. Given the proximity of the Allt Creag Bheithin watercourse and high productivity superficial units, this area is likely to be fed by a combination of surface and groundwater sources.	Highly Dominant	High	Very High
A327	M15b	0.078	Area of mire (M15b) located at the base of the A9 embankment, upslope of the Allt Creag Bheithin watercourse. Area underlain by shallow peaty soils, with soil and peat depths of 0.25m measured in this area. Underlain by moderate to high productivity alluvium deposits and low productivity Dava Group psammite deposits. Given the proximity of the Allt Creag Bheithin watercourse and high	Moderately Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			productivity superficial units, this area is likely to be fed by a combination of surface and groundwater sources.			
A331	MG9/M6c/ U4b	0.171	Mosaic of rush pasture (MG9) (75%), mire (M6c) (15%) and grassland located at the base of the A9 embankment, upslope and adjacent to the Allt Creag Bheithin watercourse. Area underlain by shallow peaty soils (up to 1m depth) moderate to high productivity alluvium deposits and low productivity Dava Group psammite deposits. Given the proximity of the Allt Creag Bheithin watercourse and high productivity superficial units, this area is likely to be fed by a combination of surface and groundwater sources.	Highly Sub-dominant	High	Very High
A330	MG9/U4	0.122	Mosaic of rush pasture (MG9) (75%) and grassland located downslope and south-east of the existing A9, adjacent to existing conifer plantation. The Allt Creag Bheithin is located 10m downslope and to the west. This area is underlain by thin peaty podzols, moderate to high productivity alluvium deposits and low productivity Dava Group psammite deposits. Given the proximity of the Allt Creag Bheithin watercourse and high productivity superficial units, this area is likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Moderate	High
A393	MG10a	0.106	Small area of marshy grassland (MG10) bound by a forestry track to the west, with the remaining sides bound by conifer forestry. The Allt na Slanaich watercourse is located 10m to the east, meandering towards the north and the existing A9. Adjacent conifer plantation features numerous artificial drains running north. The area slopes gently north-east towards the watercourse. Underlain by peaty podzols, high productivity Glaciofluvial deposits and low productivity Dava Subgroup psammite deposits. The area is likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Moderate	High
A394	W17/H9-12/U4b/M6c /MG9/MG10 a	1.075	Mosaic of rush-pasture (MG9) (10%), marshy grassland (MG10a) (10%), woodland, heath and mire (M6c) (10%) along the northbound embankment of the A9, south of the carriageway where it moderately slopes towards the adjacent conifer forestry. Soil and peat depths in this area are up to 0.67m in depth. A number of tributaries of the Moy Burn flow north through this area under the carriageway. Ground Investigation works at trial pits TPTM3177, TPTM3176 and TPTM3271 indicate the area is underlain by peaty podzols	Highly Sub-dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			and clayey sand and gravels, with the highest groundwater level recorded at 1.2mbgl. The area coincides with a drainage ditch associated with road runoff. Given the surface water features and steep slopes within this area, it is likely to be fed primarily by surface water run-off and precipitation.			
A291	W4b/W17c	0.026	Mosaic of broad-leaved semi-natural woodland (W4b) (50%) within a larger area of conifer plantation, adjacent to a small drain flowing north-west towards the Allt na Slanaich. Conifer forestry modified by artificial drainage systems. Underlain by peaty podzols, high productivity Glaciofluvial sheet deposits and low productivity Dava Subgroup psammite deposits. Due to the modified drainage surrounding the area, this area is likely to be fed by precipitation and surface water run-off.	Highly Sub-dominant	Moderate	High
A248	M6c	0.177	Area of mire (M6c) along a small artificial drain flowing north along a gentle slope towards the existing A9. Peat depths in the area are a maximum of 0.6m deep, with the area underlain by peaty podzols, low productivity Devensian Till and Dava Subgroup psammite. Due to a low bedrock aquifer productivity, proximity to a watercourse and very thin soils; a combination of water sources are considered likely to be supplying the communities present in the area in addition to groundwater; precipitation and surface generated run-off.	Highly Dominant	Moderate	High
A250	M19a/M15c/ M15d	0.721	Area of wet heath (M15c and M15d) (20%) located on the hill slope above the existing A9, sloping moderately north. Underlain by peaty podzols, low productivity Devensian Till and psammite deposits. This area is not likely to be groundwater fed due to peat deposits of 0.5m depth where M15c and M15d communities are present, with precipitation and hill runoff likely to be the dominant sources.	Moderately Sub-dominant	Low	Medium
A252	U5b/M15a/ M15b	0.034	Mosaic of wet heath (M15a and M15b) (30%) and acid grassland located immediately upslope of the existing A9, along gentle slopes perpendicular to the road. Underlain by peaty soils varying between 0.2 and 0.5m, low productivity Devensian Till and Dava Subgroup Psammite. Due to lack of superficial aquifer and low bedrock aquifer productivity, precipitation and surface generated run-off are considered to have more influence on the vegetation than groundwater.	Moderately Sub-dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
A259	M6a/M6d/M4/M6c	0.198	Mosaic of mires (M6a, M6c and M6d) (90%) located south-west and upslope of the existing A9. A small ridge is located between the habitat and the road features rocky outcrops, with deep peatland located immediately adjacent to the south-west. Aerial imagery shows a small drain running through this area. Peat probing shows a maximum peat depth of 2.7m. Underlain by peaty podzols, high productivity Glaciofluvial Ice Contact deposits and low productivity psammite deposits. Due to the presence of the drain running through the area and high productivity deposits, this area is likely to be fed by a combination of surface and groundwater sources, with groundwater dependency no more than moderate.	Highly Dominant	Moderate	High
A258	M6c/M4	0.406	Mosaic of mires (M6) (90%) located on flat peatland area upslope of the existing A9. An artificial drain is located south-east of the area, flowing north-east then south-east towards the Allt na Loinne Moire. Underlain by low productivity peat deposits up to 4.5m in depth, underlain by low productivity psammite deposits. Due to the low aquifer productivity, precipitation and surface generated run-off are considered to have more influence on the vegetation than groundwater.	Highly Dominant	Moderate	High
A254	W17b/M19a/Je	0.467	Mosaic of woodland, blanket mire and Juncus Effusus (1%) adjacent and parallel to the verge of the existing A9 on the northbound side. Slope angles are relatively flat. Underlain by low productivity Devensian Till and psammite deposits, with soil and peat depths of up to 0.7m deep. Ground Investigation works at borehole BHTM3127 and trial pit TPTM3154 show the area is underlain by peat (0.7m thick), sand and clay deposits, with groundwater encountered at 1.8mbgl and groundwater monitoring showing the highest groundwater level recorded was 2.89mbgl. Due to the ground investigation results, this area is not likely to be fed by groundwater.	Moderately Sub-dominant	Not GW dependent	Low
A274	U5b/Je/M6c/U4a	0.594	Mosaic of mire (10%) and grassland habitats located along the north-western banks of the Allt na Loinne Moire, located upslope of the existing A9. Area slopes moderately to the south-east towards the watercourse. Ground Investigation at borehole BHTM3111 indicate the area is underlain by peat and sand deposits. Underlain by peaty soils, high productivity River Terrace	Highly Sub-dominant	Not GW dependent	Low

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			deposits and low productivity psammite deposits, with the highest groundwater level measured at 3.08m. Ground Investigation works indicate this area is not likely to be dependent on groundwater due to recorded GW levels, and more likely to be fed by precipitation and surface water run-off.			
A271	Je/H9-12/U4b/U5a	0.137	Mosaic of Juncus Effusus (55%), heath and grassland habitats immediately upslope of the A9, located along gentle slopes above the road cutting. Ground Investigation works at borehole BHTM3114 show the area is underlain by Glaciofluvial Ice (sand) deposits, with the highest groundwater level recorded at 2.7mbgl at TPTM3147. Based on groundwater levels and its topographic location, this habitat is not dependent on groundwater sources.	Moderately Dominant	Not GW dependent	Low
A204	U5a/U4b/Je	0.218	Mosaic of Juncus Effusus (20%) and grassland located along moderate slopes, which slope south towards peatland. A number of artificial drains are located at the bottom of the slope which also flow south. Underlain by peaty gleys, high productivity Glaciofluvial Ice Contact deposits and low productivity psammite deposits. This area is likely to be fed by a combination of surface and groundwater sources, including hill runoff and precipitation.	Moderately Sub-dominant	Moderate	High
A203	M6c/MG10a /M23b/ M23a/Je	2.537	Mosaic of marshy grassland (MG10a) (40%), mires including M6c (40%), M23a (5%) and M23b (10%), and Juncus Effusus (5%) habitats. Located on a flat area of peatland south of the existing A9 scheme, with peat depths of up to 5.4m. Area features numerous artificial drains which flow predominantly towards the east flowing into the Allt na Loinne Moire. Underlain by peaty gleys, low productivity peat and psammite deposits. Given the depth of peat within areas this is likely to be fed primarily by surface water runoff and precipitation, with only a low groundwater dependency.	Highly Dominant	Low	Medium
A161	U4b/MG10a /H9-12	0.178	Mosaic of marshy grassland (MG10) (45%) and heath located along the northern access track to the Lynemore property, on shallow hill slopes of Carn na Loine. A small watercourse located south-east of this area flows parallel and north-east to this area. Area underlain by peaty gleys, low productivity Devensian Till and psammite deposits.	Moderately Sub-dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			This area is likely to be fed by a combination of surface water sources (precipitation and hill runoff) as well as groundwater sources.			
A281	M19a/H21a/ Je	0.478	Mosaic of Juncus Effusus (20%), heath and blanket mire located along undulating slopes, between an existing access track upslope and the existing A9 downslope and to the north. An unnamed watercourse is located 100m east, which flows north towards Loch Moy. Soil and peat depths in this area were generally shallow, with a maximum depth of 0.71m recorded. Ground Investigation works at trial pit TPTM3282 indicate the area is underlain by peaty gleys, Glaciofluvial Ice Deposits (sand and gravel) and peat, with groundwater encountered at 4.1mbgl. Given the groundwater levels recorded, it is unlikely this area is dependent on groundwater sources, with surface water sources likely to be the dominant supply mechanism.	Moderately Sub-dominant	Not GW dependent	Low
A277	M6c/Je	0.069	Mosaic of mire (M6c) (70%) and Juncus Effusus (30%) located upslope and south of the A9 carriageway, approximately 15m south and upslope of the Allt na Loinne Moire watercourse. Ground Investigation works at trial pit TPTM3283, located 15m upslope show the area is underlain by high productivity sand deposits, with water seepage noted at the base of the pit at 4.5m depth. Given this area is located between the trial pit and watercourse, groundwater levels may be shallow further north, contributing to this area. This area is likely to be fed by a combination of surface and groundwater sources.	Highly Dominant	Moderate	High
A263	Je	0.349	Area of Juncus Effusus located on shallow to moderately sloping area upslope of the existing A9 carriageway. Ground Investigation works at trial pit TPTM3283, located 13m downslope show the area is underlain by thin peaty gleys, high productivity sand deposits, with water seepage noted at the base of the pit at 4.5m depth. Given the topographic location above the trial pit location and moderate slopes, it is unlikely this area is fed by groundwater sources, with precipitation and hill off being the main sources.	Moderately Dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
A149	U4b/U5a /U6d	0.745	Area of grassland (U6d) (30%) which moderately slopes north towards the Dalmagarry Burn, with a small unnamed tributary flowing parallel and east to the area. Underlain by peaty podzols, high productivity Glaciofluvial Ice Contact Deposits and low productivity Dava Subgroup psammite deposits. This area is likely to be fed by a combination of surface water sources (precipitation and hill runoff) and groundwater sources.	Moderately Sub-dominant	Moderate	High
A152	M6c	0.063	Area of mire (M6c) habitat located along the banks of a small unnamed tributary of the Dalmagarry Burn, flowing north. Located downslope of an existing estate acess track. Underlain by peaty podzols, high productivity Glaciofluvial Ice Contact Deposits and low productivity Dava Subgroup psammite deposits. This area is likely to be fed by the watercourse, precipitation and run off, with groundwater dependency no more than moderate.	Highly Dominant	Moderate	High
A154	U4b/U5a /U6d/Je	0.135	Mosaic of grassland (U6d) (10%) and Juncus Effusus (10%) located at the base of the Highland Mainline Railway embankment to the north-east and an existing access track to the south. The Dalmagarry Burn flows east immediately downslope of this area. The area is underlain by thin peaty soils, high productivity Glaciofluvial Ice Contact Deposits and low productivity Dava Subgroup psammite deposits. This area is likely to be fed by a combination of surface water sources (precipitation and hill runoff) and groundwater sources.	Moderately Sub-dominant	Moderate	High
A151	Je	0.081	Area of Juncus Effusus located along the southern banks of the Dalmagarry Burn. A tributary of the Dalmagarry Burn flows north through this area. The area slopes gently to the north towards the watercourse. Underlain by peaty podzols, moderate to high productivity alluvium deposits and low productivity psammite deposits. The area is located within the SEPA 200 year fluvial floodplain. Given its location within floodplain and proximity to the Dalmagarry Burn, groundwater levels are anticipated to be shallow and may have some groundwater dependency. This area is likely to be fed by a combination of hill runoff, precipitation and groundwater.	Moderately Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
A150	U4b/U6d/Je	0.282	Mosaic of grassland (U6d) (25%) and Juncus Effusus located along the southern banks of the Dalmagarry Burn. Underlain by moderate to high productivity alluvium deposits and low productivity psammite deposits. The area is within the SEPA 200 year floodplain. Given its location within floodplain and proximity to the Dalmagarry Burn, groundwater levels are anticipated to be shallow and therefore have some groundwater dependency, as well as hill runoff and precipitation.	Moderately Sub-dominant	Moderate	High
A147	U4a/Je/U5a /U4b	0.100	Mosaic of grassland and Juncus Effusus (35%) located at the base of the hill along the banks of the Dalmagarry Burn. Area slopes moderately north towards the watercourse. Underlain by peaty podzols, moderate to high productivity alluvium deposits and low productivity psammite deposits. Likely to be fed by a combination of hill runoff, precipitation and groundwater sources.	Moderately Sub-dominant	Moderate	High
A147	U4a/Je/U5a /U4b	0.154	Mosaic of grassland and Juncus Effusus (35%) located at the base of the hill slope, with a moderate slope angle, along the banks of the Dalmagarry Burn. Underlain by moderate to high productivity alluvium deposits and low productivity psammite deposits. Likely to be fed by a combination of hill runoff, precipitation and groundwater sources.	Moderately Sub-dominant	Moderate	High
A145	M15b/M15d /H9-12/M19a	0.166	Mosaic of wet heath (M15b and M15d) (78%), mire and heath located upslope of the Dalmagarry Burn, which flows east towards the A9. The area slopes gently to the north. Underlain by peaty podzols, high productivity Glaciofluvial Ice Contact deposits and low productivity psammite deposits. Likely to be fed by a combination of hill runoff, precipitation and groundwater sources.	Moderately Dominant	Moderate	High
A138	H9-12/M15b/ M16d/M15a /M15c	1.378	Mosaic of heath, wet heath ((M15a, M15b, M15c) (40%) and M16d (20%)) located upslope of existing estate track and south-west of the Highland Mainline Railway. The area slopes moderately to the north. A small watercourse flows north within this area towards the Dalmagarry Burn. Aerial imagery shows a number of drains within this area of bog which flow into this watercourse. Underlain by peaty podzols, high productivity Glaciofluvial Ice Contact Deposits and low productivity psammite deposits. GIven the presence of mire (peatland) it is likely that this area is fed by a	Highly Sub-dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			combination of hill runoff, precipitation and groundwater sources, with groundwater dependency no more than moderate.			
A156	H9-12/M16d	1.608	Mosaic of wet heath (M16d) (50%) and heath, with moderate slope angles which slope north towards the Highland Mainline Railway. A forestry track runs south-west adjacent to the area, and a small watercourse to the west which flows north to the Dalmagarry Burn. Peat surveys show the area features shallow soils (peaty podzols) with a maximum depth of 0.2m. Underlain by high productivity Glaciofluvial Ice Contact deposits and low productivity psammite deposits. Likely to be fed by a combination of hill runoff, precipitation and groundwater sources.	Highly Sub-dominant	High	Very High
A405	M6c/M6a	0.051	Narrow area of mire (M6a and M6c) located between the existing A9 road verge and cycle path, located in a relatively flat area. Ground Investigation works at trial pit TPTM3065 immediately to the east shows the area is underlain by silt, with no groundwater encountered to 4.5m depth. Due to the Ground Investigation results and topography, where the area is bound by the road to the east and drainage ditch to the west this area is likely to be fed primarily by precipitation and routine road run-off.	Highly Dominant	Low	Medium
A107	H9-12/W4/U4a/M6c	0.263	Mosaic of mire (M6c) (10%), woodland (W4) (30%) heath and grassland habitats, located alongside the existing A9 highway drainage ditch to the west of the verge. Ground Investigation works at trial pits TPTM3061 and TPTM3061A show the area is underlain by Glaciofluvial sand and gravels, with groundwater levels recorded at 1.3mbgl. This area is likely to be fed by a combination of surface water sources including road runoff and precipitation, as well as groundwater.	Highly Sub-dominant	Moderate	High
A404	U4a/H9-12/U6/U4b/U5a	1.500	Mosaic of grassland (U6) (10%) and heath along the existing northbound A9 verge, which is relatively flat. Ground Investigation works at TPTM3291 indicate the area is underlain by topsoil and sand, which was dry to 2.6m depth. Trial pit TPTM3065 indicated sandy silt which was dry to 4.5m depth. Given the lack of groundwater encountered during Ground Investigation works, groundwater levels are not likely to be shallow in this area, with this area likely to be fed by precipitation and road runoff.	Moderately Sub-dominant	Not GW dependent	Low

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A102	U4a/U4b/ MG10a	0.169	Mosaic of marshy grassland (MG10) (10%) and grassland habitats located downslope of the Highland Mainline Railway and upslope of the existing northbound A9. Ground Investigation works at borehole BHTM3039 located 25m north of this area shows it is underlain by gravel and sand, with the highest winter groundwater level recorded at 1.71 mbgl. This area is deemed not to be groundwater dependent based on groundwater monitoring, with precipitation and runoff likely to be the dominant water sources.	Moderately Sub-dominant	Moderate	High
A410	W11/W4 /W7	0.074	Mosaic of woodland, W4 (25%) and W7 (25%) located along the verge of the northbound A9 carriageway, located at the bottom of the hill beneath the railway. Area features relatively shallow slope angles, sloping north-east towards the A9. Ground Investigation works at trial pit TPTM3078, located 25m south-east, show the area is underlain by sand with cobbles, with no groundwater encountered to a depth of 4.5mbgl. This area is likely to be predominantly fed by precipitation and surface run-off.	Highly Dominant	Moderate	High
A406	M15b/H9-12	0.025	Mosaic of mire (M15b) (50%) and heath habitats between the road verge and railway embankment. Underlain by high productivity Glaciofluvial Ice Contact deposits and low productivity psammite deposits. Underlain by peaty podzols, high productivity Glaciofluvial Ice Sheet deposits and low productivity psammite deposits. This area is likely to be fed by a combination of surface water runoff, precipitation and groundwater sources.	Moderately Sub-dominant	Low	Medium
A404	U4a/H9-12/U6/U4b/ U5a	0.102	Mosaic of grassland (U6) (10%) and heath habitats, located east and at the base of the railway embankment along the existing cycle path. Underlain by peaty podzols, high productivity Glaciofluvial Ice Contact Deposits and low productivity psammite deposits. Area likely to be fed from a combination of surface and groundwater sources.	Moderately Sub-dominant	Moderate	High
A401	U4a/M15d/ M6c/H9-12	0.206	Mosaic of mire (M6c) (25%), wet heath (M15d) (30%), heath and grassland habitats along the northbound A9 carriageway at the base of the hill. Road drainage ditch located at north end of area, flowing north. Ground Investigation works at TPTM3057 indicate the area is underlain by thin topsoil and clayey sand, with no groundwater encountered at a depth of 4.5m. The GI results show this area is not likely to be fed by groundwater sources,	Highly Sub-dominant	Not GW dependent	Low

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			with precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.			
A108	U4b/MG10a	0.251	Mosaic of rush-pasture (MG10a) (50%) and grassland located adjacent to the existing A9 carriageway on the existing verge. Area is relatively flat. Ground Investigation works at adjacent trial pit TPTM3057 indicate the area is underlain by thin topsoil and clayey sand, with no groundwater encountered to a depth of 4.5m. The GI results show this area is not likely to be fed by groundwater sources, with precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches considered to be the dominant water supply mechanisms.	Moderately Dominant	Low	Medium
A096	U4b/MG10a	0.362	Area of rush-pasture (MG10) (15%) running north-south along existing A9 verge north of Tomatin. Ground Investigation works at trial pit TPTM3053 indicates the area is underlain by topsoil, made ground and sand, with no groundwater encountered to a depth of 4.5m. Based on Ground Investigation results, this area is not dependent on groundwater, with precipitation and hill runoff likely to be the main sources.	Moderately Sub-dominant	Not GW dependent	Low
A399	U4b/MG10a	0.193	Area of rush-pasture (MG10) (40%) and grassland wedged between the cycle path upslope and an existing A9 layby downslope. Slope angles are moderate, sloping east towards the road. Ground Investigation works at trial pit TPTM3049 indicate the area is underlain by topsoil and sand, with no groundwater encountered to a depth of 4.5mbgl. Based on Ground Investigation results, this area is not dependent on groundwater, with precipitation and hill runoff likely to be the main sources.	Moderately Sub-dominant	Not GW dependent	Low
A397	M6a/M6c /M25a	0.041	Mosaic of mire (M6a and M6c) (98%) and M25a (2%) located immediately downslope of the Highland Mainline Railway, with a cycle path located downslope. Area slopes moderately south-east towards the existing A9. Underlain by low productivity peat and granodiorite deposits. The embankment immediately upslope is likely to act as a natural barrier to hill-runoff. This area is likely to be fed by a combination of precipitation and groundwater sources.	Highly Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
A087	U4b/MG9	0.009	Mosaic of marshy grassland (MG9) (50%) and grassland covering a small area within woodland west and upslope of the existing A9 carriageway. A small drain is located 15m south of the area, which flows north-east under the road. Underlain by humus-iron podzols, low productivity peat and granodiorite deposits. This area is likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Low	Medium
A082	W7a	0.044	Area of woodland (W7a) located along the northern banks of the Allt Dubhag watercourse, which flows north-east under the A9 towards the Findhorn. Area slopes moderately south-east to the watercourse. Underlain by humus-iron podzols, moderate to high productivity alluvium deposits and low productivity granodiorite deposits. This area is likely to be fed by a combination of surface water sources (precipitation and hill runoff) and groundwater sources.	Highly Dominant	High	Very High
A077	Je	0.040	Area of Juncus Effusus located along a drain, upslope of the existing A9 at Tomatin Junction. The drain flows east flowing directly into the River Findhorn. The area slopes gently towards the east. Ground Investigation works at trial pit TPTM3263 show the area is underlain by topsoil, gravel and sandy clay, with water encountered at 1.25mbl. This area is likely to be dependent on a combination of surface and groundwater, based on the presence of the drain and recorded groundwater levels.	Moderately Dominant	Moderate	High
A015	MG10a	0.020	Area of rush pasture (MG10) located south and upslope of the existing A9, near the settlement of Smithfield. The area slopes gently to the north-west, with the River Findhorn located approx. 300m to the south-east. Underlain by humus-iron podzols, low productivity Devensian Till and granodiorite deposits. This area is likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Low	Medium
A026	U4a/MG10a	0.055	Mosaic of rush pasture (MG10) (10%) and grassland, located downslope of the existing A9 in an area of existing woodland. A small unnamed tributary of the Findhorn approximately 35m north-west and downslope, flows north-east towards the existing A9 carriageway. Area underlain by high productivity	Moderately Sub-dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			Glaciofluvial Sheet Deposits and low productivity granodiorite deposits. This area is likely to be fed by a combination of surface and groundwater sources.			
A029	U4b/MG10a /U5a/U6	0.196	Mosaic of rush pasture (MG10a) (30%) and grassland (U5) (10%), located within a shallow sloping area, adjacent to the property at Modhachaidh and downslope of the existing A9 carriageway. A small watercourse flows north-east towards the A9, downslope and north-west of this area. OS mapping indicates water issues 50m to the west and downslope, indicating shallow groundwater levels nearby. Underlain by high productivity Glaciofluvial Sheet Deposits and low productivity granodiorite deposits. This area is likely to be fed by a combination of surface and groundwater sources.	Moderately Sub-dominant	Moderate	High
A021	H12a/H21a/ M15b/U5a/ U6	1.665	Mosaic of wet heath (M15b) (10%) and grassland (U6) (10%) located adjacent to and upslope of the existing A9 carriageway, east of Tomatin. The nearest watercourse is located 55m north-west, and sits 5m lower topographically. Ground Investigation works at trial pit TPTM3001, immediately downslope and adjacent to the area, show the area is underlain by clayey sand with no groundwater encountered to a depth of 2.1m. Due to the topography and trial pit results this area is not likely to be fed by groundwater sources, with precipitation and hill runoff likely to be the main sources.	Moderately Sub-dominant	Low	Medium
A073	Je	0.016	Area of Juncus Effusus located at the existing Tomatin Junction at a similar topographic level to the minor road, and upslope of the existing A9 road. A small drain is located along the verge of the northbound carriageway which flows south-east. Area is underlain by humus-iron podzols, high productivity Glaciofluvial Sheet Deposits and low productivity granodiorite. This area is likely to be fed by a combination of surface water (precipitation) and groundwater sources.	Moderately Dominant	Moderate	High
A066	MG10a/U4b /MG1	0.309	Mosaic of rush pasture (MG10a) (80%) located upslope and west of the existing A9 carriageway. Area features shallow slope angles, sloping to the east. The Allt na Frithe watercourse is located to the south-east, flowing north-east towards the River Findhorn. Underlain by humus-iron podzols, low productivity Devensian Till and Granodiorite Deposits. Due to the topography of the area and low productivity units it is not likely to	Moderately Dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			be fed by groundwater, with precipitation and surface runoff being the predominant water sources.			
A070	U4b/OV25/ MG10a	0.238	Mosaic of rush-pasture (2%) and grassland located along the northbound verge of the A9 carriageway, south of Tomatin Junctin. A small artificial drain is located in the north of the area running parallel to the area, with the Allt na Frithe watercourse flowing north-east across the area. Ground Investigation works at trial pit TPTM3031 show the area is underlain by topsoil, made ground, sand, clay and gravel deposits with no groundwater encountered to a depth of 4m. This area is likely to be fed primarily by precipitation and road run-off, with a groundwater component more likely towards the south of the area.	Moderately Sub-dominant	Moderate	High
A064	U4b/U4a/U5a/MG1/MG10a/Je	1.825	Mosaic of rush pasture (MG10) (10%), Juncus Effusus (5%) and grassland located along the steep banks of the Allt na Frithe watercourse, upstream of the A9 carriageway. The valley of the watercourse is up to 10m in height. Ground Investigation works at TPTM3025 reveal the area is underlain by topsoil and sand, with no groundwater encountered to a depth of 4m. Due to the topographical location, steep banks and ground investigation results, this area is likely to be fed by precipitation, surface water runoff and the watercourse.	Moderately Sub-dominant	Not GW dependent	Low
A051	MG10a	0.014	Area of rush-pasture (MG10) located south-west and upslope of the existing A9 carriageway, at the top of a small hill. The area features shallow slope angles, sloping to the north. Peat probing indicates shallow soils in the wider area (less than 0.5m deep). Underlain by humus-iron podzols, high productivity Glaciofluvial Sheet Deposits and low productivity granodiorite deposits. Due to its topographical location, this area is likely to be fed by precipitation and hill runoff.	Moderately Dominant	Moderate	High
A054	M6c	0.007	Small area of mire (M6c) located upslope of the existing A9, sloping gently to the north. Ground Investigation works at nearby boreholes BHTM3010 (40m west) and BHTM3011 (15m north), both at a similar topographic height, show the area is underlain by clayey and silty sands and gravels, with the highest groundwater levels recorded at 3.72mbgl and 5.72mbgl respectively. Given the adjacent Ground Investigation groundwater strikes, this area is not	Highly Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			likely to be fed by groundwater, with precipitation and surface water run-off being the dominant water sources.			
A042	W11d/W7a	0.142	Area of broad leaved woodland and (W7a) (10%) immediately north of the property Porter's Lodge, located south-west and downslope of the existing A9. Area features shallow slope angles. A small unnamed watercourse lies approximately 50m south-east of the area, flowing north-east. Area underlain by humus-iron podzols, high productivity Glaciofluvial Sheet deposits and low productivity granodiorite deposits. This area may be fed by a combination of surface water and groundwater sources.	Highly Sub-dominant	High	Very High
A048	Je	0.049	Area of Juncus Effusus located at the edge of a field adjacent to woodland, south-west and upslope of the existing A9 at Tomatin. The nearest watercourse is located 130m to the south-east. Ground Investigation results from borehole BHTM3006 immediately south of the area reveal the area is underlain by sand and gravel deposits. No groundwater was encountered to 11mbgl and the highest groundwater monitoring result recorded at 10.09mbgl. Based on GI results, this area is predominantly fed by precipitation and surface water run-off.	Moderately Dominant	Low	Medium
A047	M6c	0.035	Area of mire (M6c), adjacent to a small pocket of deep peat with the existing A9 located north-east of the area. This area is relatively flat. Ground Investigation results from nearby borehole BHTM3228 reveal the area is underlain by topsoil, sand and gravel deposits. No groundwater was encountered to a depth of 10mgbl and no groundwater reported during monitoring. Based on GI results, this area is predominantly fed by precipitation and surface water run-off.	Highly Dominant	Low	Medium
A402	U4a/U4b/ MG10a	0.049	Area of rush pasture (MG10) (10%) and grassland located between the Highland Mainline Railway upslope to the west, and the existing A9 carriageway downslope to the east. The area slopes moderately south-east. A small unnamed watercourse flows north immediately south of the area, with a road drain located along the existing road verge east of the area. Underlain by peaty podzols, high productivity Glaciofluvial Sheet Deposits and low productivity granodiorite deposits.	Moderately Sub-dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			This area may be fed by a combination of surface water and groundwater sources.			
A061	MG10a	0.164	Area of grassland (MG10) located north-east of the C1121 road, within a field. The area is relatively shallow and features shallow soil depths. Ground Investigation results from borehole BHTM3006 located 50m east of the area show it is underlain by sand and gravel deposits, with no groundwater encountered to 11mbgl and the highest groundwater monitoring result recorded at 10.09mbgl. Trial pit TPTM3015 indicate clayey sand with no groundwater recorded to a depth of 3.7mbgl. Based on GI results, this area is predominantly fed by precipitation and surface water run-off.	Moderately Dominant	Low	Medium
B005	H12a/M6c	0.119	Mosaic of mire (M6c) (20%) and heath within an area of conifer forestry with relatively steep slopes, located north and up gradient of the existing A9 road. Area features numerous drains as wider area has been modified for conifer plantation. Underlain by peaty gleys, low productivity Devensian Till and psammite deposits. Precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms	Highly Sub-dominant	Low	Medium
B055	M15b	0.057	Area of wet heath (M15b) located immediately downslope of conifer plantation, which moderately slopes south-east towards the existing A9 road. Area features artificially modified drainage downslope along the existing A9 carriageway. Underlain by peaty gleys, low productivity Devensian Till and psammite deposits. Precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms	Moderately Dominant	Low	Medium
B056	M15b	0.085	Area of wet heath (M15b) immediately downslope of conifer plantation, which moderately slopes south-east towards the existing A9 road. Area artificially modified by conifer plantation upslope, with drainage ditches running north-south. Underlain by peaty gleys and low productivity Devensian Till and psammite deposits. Precipitation and surface generated run-off from surrounding slopes and	Moderately Dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			artificial drainage ditches are considered to be the dominant water supply mechanisms			
B058	M15b/MG10a/U4/MG9	0.445	Area of wet heath (M15b) (50%), marshy grassland (MG9) (5%) and rush-pasture (25%) located along a moderate to shallow hill slope between conifer forestry upslope and the existing A9 downslope. Area heavily modified by artificial drainage ditches which run south. Peat depths measured at 0.55m indicating deep peat, underlain by low productivity Devensian Till and psammite deposits. Given the presence of drainage ditches, precipitation and surface generated run-off from surrounding slopes are considered to be the dominant water supply mechanisms.	Moderately Dominant	Low	Medium
B061	M15b/H12	0.165	Area of wet heath (M15b) (90%), marshy grassland (MG9) (5%) and rush-pasture (25%) located along a moderate to shallow hill slope between conifer forestry upslope and the existing A9 downslope. Area heavily modified by artificial drainage ditches which run south. Peat depths measured at 0.55m indicating deep peat, underlain by peaty gleys, low productivity peat and psammite deposits. Given the presence of drainage ditches, precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.	Moderately Dominant	Low	Medium
B066	H12/M15b	0.637	Area of wet heath (M15b) (10%) and heath located downslope of conifer plantation, on an area which slopes gently towards the existing A9. Aerial imagery shows the area is modified by artificial drainage ditches running south-east. Ground Investigation works at trial pit TPTM3194 located 15m south and downgradient of the area show the area is underlain by gravel, with groundwater seepage recorded at 1.7mbgl. Due to the presence of drainage ditches, precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.	Moderately Sub-dominant	Low	Medium
B064	M6c/MG9	0.262	Area of mire (M6c) (85%) and marshy grassland (MG9) (15%) located within an area of deep peat (approximately 1m depth) downslope of conifer plantation, which gently slopes south towards the existing A9 road. Aerial imagery shows a number of artificial drainage ditches flowing south-east. Underlain by peaty gleys, low productivity peat and psammite deposits.	Highly Dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			Due to the presence of drainage ditches and deep peat, precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.			
B021	H12a/M15b	0.093	Area of wet heath (M15) (15%) and heath located on moderate slopes within conifer forestry, upslope and north of the existing A9. Underlain by peaty pozols, low productivity Devensian Till and psammite deposits. Due to the presence of low productivity deposits, this area is likely to be fed by a combination of surface water and groundwater sources.	Moderately Sub-dominant	Low	Medium
B020	M25a	0.075	Area of mire (M25a) moderately sloping south-east towards the existing A9 carriageway. Underlain by peaty podzols, low productivity Devensian Till and psammite deposits. Due to the presence of low productivity deposits, this area is likely to be fed by a combination of surface water and groundwater sources.	Moderately Dominant	Low	Medium
B006	H12a/M25a/ M20	0.118	Mosaic of mire (M25a) (14%), blanket mire and heath located along a forest ride, surrounded by conifer plantation. Area slopes moderately south-east. Surrounding area features modified drainage ditches flowing south-west. Underlain by peaty podzols, low productivity Devensian Till and psammite deposits. Due to the presence of drainage ditches, precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.	Moderately Sub-dominant	Low	Medium
B013	H12/U4/M25/M20	0.162	Mosaic of mire (M25) (2%), heath and grassland along an old forest ride in an area of recently felled conifer plantation. Area slopes gently to the east, with aerial imagery showing the area features artificial drainage ditches flowing east towards the Allt Creag Bheithin. Underlain by peaty podzols, low productivity Devensian Till and psammite deposits. Due to the presence of drainage ditches, precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.	Moderately Sub-dominant	Low	Medium
B070	M25a/M20/ U5a	0.735	Mosaic of mires including M25a (60%) and grassland in an area of recently felled conifer plantation. Area slopes gently to the east, with aerial imagery showing the area has artificial drainage ditches flowing both north and east immediately upslope of the area. Underlain by peaty podzols, low productivity	Moderately Dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			Devensian Till and psammite deposits. Due to the presence of drainage ditches, and deep peat present in areas of M25 mire, precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.			
B079	M25b/U5a	0.222	Mosaic of mire (M25b) (60%) and grassland located along shallow slopes north of the existing A9. The Allt Creag Bheithin flows north-east immediately downslope of this area. Ground Investigation works at trial pit TPTM3287 show the area is underlain by topsoil and gravel, with groundwater encountered at 2.7mbgl. Due to the presence of mire (M25b) on deep peat, and low groundwater levels, this area is likely to be fed by precipitation and surface water runoff.	Moderately Dominant	Low	Medium
B081	M6c	0.084	Area of mire (M6c) habitat within a flush area, located upslope of the Allt Creag Bheithin watercourse, on gentle slopes located within the floodplain. Underlain by peaty podzols, low productivity peat and psammite deposits. Given the location of the area within the floodplain and proximity to the watercourse, this area is likely to be fed by a combination of surface water flow, precipitation as well as groundwater.	Highly Dominant	Moderate	High
B076	MG9	0.084	Area of marshy grassland (MG9) located along the banks of the Allt Creag Bheithin, located north and downslope of the existing A9. Ground Investigation works at nearby trial pit TPTM3182 show the area is underlain by peaty podzols and gravel, with groundwater encountered at 1.7mbgl. Given its location along the watercourse and recorded groundwater levels, this area is likely to be fed by a combination of surface water flow from watercourses, precipitation and groundwater.	Moderately Dominant	Moderate	High
B085	Je/U4	0.591	Mosaic of Juncus Effusus (55%) and grassland habitats located upslope of the Allt Creag Bheithin watercourse, on an area with gentle slopes located within the floodplain. Underlain by peaty podzols, moderate to high productivity alluvium and psammite deposits. Given the location of the area within the floodplain and proximity to the watercourse, it is likely groundwater levels are shallow and may provide some contribution to this habitat.	Moderately Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
B090	M6c/Je	0.194	Mosaic of mire (M6c) (60%) and Juncus Effusus (40%) located north and downslope of the existing A9, with the area sloping gently north. Area underlain by high productivity Glaciofluvial Sheet Deposits and low productivity psammite deposits. This area is likely to be fed by a combination of surface and groundwater sources.	Highly Dominant	High	Very High
B093	M25	0.133	Area of mire (M25) located north and downslope of the existing A9, with the area sloping gently north. Area underlain by peaty podzols, high productivity Glaciofluvial Sheet Deposits and low productivity psammite deposits. This area is likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Moderate	High
B099	M6c	0.472	Area of mire (M6c) habitat located along the north-western banks of an unnamed tributary of the Allt Creag Bheithin, which gently slopes north-east. Site surveys noted the area to be very wet, with the habitat forming in a hollow collecting water around the watercourse. Area underlain by high productivity Glaciofluvial Sheet Deposits and low productivity psammite deposits. This area is likely to be fed by a combination of surface and groundwater sources.	Highly Dominant	High	Very High
B100	Je	0.469	Area of Juncus Effusus located north and downslope of the existing A9. The Allt Creag Bheithin flows north-east immediately east of the area. Area slopes gently to the north, and underlain by peaty podzols, high productivity Glaciofluvial Sheet Deposits and low productivity psammite deposits. This area is likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Moderate	High
B107	M23b/M6c/ M20/M6d/ M25	0.549	Mosaic of mires (M23b (50%), M6c (35%), M6d (5%), M25 (3%) and M20 (7%)) located downslope of the existing A9 along an unnamed drain which flows north and joins the Allt Creag Bheithin. Ground Investigation works at trial pit TPTM3171 15m east of the area show it is underlain by topsoil, peat, silt and gravel, with groundwater depth of 3.8mbgl recorded. Due to the presence of drainage ditches, and deep peat present in areas of M25 mire, precipitation and surface generated run-off from surrounding	Highly Dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.			
B106	Je/MG9	0.492	Mosaic of Juncus Effusus (97%) and marshy grassland (MG9) (3%) located along north and downslope of the existing A9 carriageway. The area slopes gently to the north, and is bound by two unnamed tributaries of the Allt Creag Bheithin, both of which flow north. Ground Investigation results at trial pits TPTM3171 in the west show the area is underlain by peat, silt and gravel, with TPTM3168 in the east underlain by made ground, peat and gravel. The highest groundwater strike recorded at 1.7mbgl at TPTM3168. Due to the high groundwater levels in this area, this habitat is likely to be fed by a combination of precipitation, surface water runoff and groundwater.	Moderately Dominant	Moderate	High
B105	MG9/U4	0.106	Mosaic of marshy grassland (MG9) (95%) located along a narrow strip parallel to the southbound carriageway on the embankment. This area is located on the embankment on a raised section of road, with an unnamed watercourse immediately to the east flowing north. Ground Investigation results at nearby trial pit TPTM3168 10m north show the area is underlain by made ground, peat and gravel, and the highest groundwater strike recorded at 1.7mbgl at TPTM3168. Given its topographical location, precipitation and surface generated run-off from surrounding slopes are considered to be the dominant water supply mechanisms.	Moderately Dominant	Low	Medium
B189	U4/Je	0.036	Mosaic of Juncus Effusus (4%) and grassland located between the Highland Mainline Railway to the west, and the existing A9 to the east. Area slopes moderately to the north west. A small unnamed watercourse approximately 30m to the north flows north-east towards the Funtack Burn. Area underlain by peaty podzols, low productivity Devensian Till and psammite. This area is likely to be fed by a combination of surface and groundwater sources.	Moderately Sub-dominant	Low	Medium
B185	U4b/MG10a /W23	0.331	Mosaic of grassland, marshy grassland (MG9) (6%) and woodland (W4) (4%) located along the road and the northern banks of the Dalmagarry Burn, downslope of the A9 road. Area moderately slopes to the south-east. The northern section of this area located within the SEPA 200 year floodplain. Ground Investigation works at BHTM3064 show the area is underlain by thin humus-iron podzols and gravels, with groundwater levels recorded at 3.5mbgl	Moderately Sub-dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			in the north. Given its location adjacent to the Dalmagarry Burn with a moderate to highly productive aquifer, this area is likely to be fed primarily by surface runoff and precipitation, with groundwater dependency likely to be low.			
B183	MG9/MG10a	0.080	Mosaic of grassland (MG9 (60%) and MG10a (40%)) located along the banks of the Dalmagarry Burn, downslope of the existing A9 at the Ruthven Road junction. Area slopes steeply north, then slope becomes gentle towards the river. Ground Investigation works at borehole BHTM3222, immediately upslope of the area show it is underlain by sand deposits, with groundwater monitoring results showing a high of 9.28mbgl. Due to the topography of this area and the recorded groundwater levels, it is unlikely this area is predominantly fed by groundwater, with surface water sources such as precipitation and slope runoff the main source.	Moderately Dominant	Low	Medium
B179	MG10a	0.449	Area of rush pasture (MG10a) located on the floodplain between the Dalmagarry Burn and the Funtack Burn, on a relatively flat area downslope and north-east of the existing A9 road. Located within the 200 year floodplain. Underlain by humus-iron podzols, moderate to high productivity alluvium deposits and low productivity psammite deposits. Given its topographical location at the base of the valley within the floodplain, this area is likely to feature high groundwater levels therefore this area is likely to be fed by groundwater, precipitation and runoff.	Moderately Dominant	Moderate	High
B180	MG10a	1.640	Area of rush pasture (MG10a) located along the northern banks of the Dalmagarry Burn, on a relatively flat area downslope and north-east of the existing A9 road. Located within the 200 year floodplain. Underlain by moderate to high productivity alluvium deposits and low productivity psammite deposits. Given its topographical location at the base of the valley, this area is likely to feature high groundwater levels therefore this area is likely to be fed by groundwater, precipitation and runoff.	Moderately Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
B149	U5b/MG10a /U4	0.046	Mosaic of rush-pasture (MG10a) (25%) and grassland located at the base of a steep slope, located between the Ruthven Road and the Dalmagarry Burn. Ground Investigation works at trial pit TPTM3260 immediately south of this area show it is underlain by peaty soil, sand and gravel, dry to a depth of 1.1m. Due to lack of superficial aquifer, a low bedrock aquifer productivity, topography and location adjacent to the burn, a combination of water sources are considered likely to be supplying the communities present in the area in addition to groundwater; precipitation and surface generated run-off.	Moderately Sub-dominant	Low	Medium
B155	H12/M15c/ U5	0.118	Mosaic of mire (M15c) (8%), heath and grassland located within an area of conifer forestry immediately downslope of the existing A9. Area slopes moderately to the north. The Dalmagarry Burn is located 45m to the north, flowing east. The area is located adjacent to the existing Dalmagarry Quarry, and is underlain by peaty podzols, high productivity glaciofluvial sand and gravel deposits. Due to presence of a higher productivity aquifer and topography, a combination of water sources are considered likely to be supplying the communities present in the area in addition to groundwater; precipitation and surface generated run-off.	Moderately Sub-dominant	Moderate	High
B026	MG10a	0.144	Area of rush-pasture (MG10a) located along the banks of an unnamed tributary of the River Findhorn, which flows north-east through the area. Located downslope of the existing A9 with moderate slope angles. Adjacent area features conifer forestry with modified drainage systems. Underlain by humus-iron podzols, moderate to high productivity alluvium deposits and low productivity granodiorite deposits. Due to its location adjacent to a watercourse, this area is likely to be fed by a combination of precipitation, surface runoff and groundwater sources.	Moderately Dominant	Moderate	High
B051	U4/W24/MG 9	0.101	Mosaic of woodland (W24) (35%), marshy grassland (MG9) (5%), grassland and ruderal plants immediately east and downslope of the existing A9 carriageway. Area moderately slopes south-east towards a small drain. Underlain by humus-iron podzol soils, and a combination of low productivity peat and Devensian Till superficial deposits and low productivity granodiorite deposits.	Moderately Sub-dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			Due to its location adjacent to a watercourse, this area is likely to be fed by a combination of precipitation, surface runoff and groundwater sources.			
B040	MG10a/U4/U5/MG9/S9a/M20	0.677	Mosaic of marshy grassland (MG9) (52%), rush pasture (MG10a) (5%), grassland, mire and swamp habitats located between the existing A9 upslope to the west, and the River Findhorn downslope to the east. Located topographically at the bottom of the valley in a relatively flat area. Area is wet underfoot and features a number of small ponds, with a drain flowing north-east also feeding the area. Ground Investigation works at trial pit TPTM3051 immediately north shows the area is underlain by high productivity gravels, with groundwater levels recorded at 1.3mbgl. This area is likely to be fed by a combination of groundwater and surface water sources.	Moderately Dominant	Moderate	High
B030	MG9/MG10a	0.089	Mosaic of marshy grassland (MG9) (95%) and rush pasture (MG10a) (5%) located along the banks of an unnamed watercourse, which flows east into the River Findhorn. Area slopes moderately to the west, becoming gentle towards the river. The area is located within the floodplain of the river. Underlain by humus-iron podzols, high productivity Glaciofluvial Ice Contact deposits and low productivity granodiorite deposits. This area is likely to be fed by a combination of groundwater and surface water sources.	Moderately Dominant	Moderate	High
B176	MG10a	0.272	Area of rush-pasture (MG10) located immediately north-east of a ditch that flows north-west then north into the River Findhorn. Area is relatively flat and slopes towards the north. Underlain by humus-iron podzols, moderate to high productivity River Terrace deposits and low productivity granodiorite deposits. This area is likely to be fed by a combination of precipitation, surface water runoff and groundwater sources.	Moderately Dominant	Moderate	High
B157	H12a/H12c/MG9	0.169	Mosaic of rush-pasture (MG9) (2%) and heath in an open area within woodland, located north and downslope of the existing A9. Area moderately slopes north-west towards an existing access track. Two ditches, located north-west and north-east of this area, flow north towards the River Findhorn. Ground Investigation works at borehole BHTM3002 immediately west of this are,a show it is underlain by sand, clay and gravel, with the highest groundwater level recorded at 1.66mbgl.	Moderately Sub-dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			Due to the presence of shallow groundwater in the north of this area, it is likely to be fed by a combination of surface and groundwater sources.			
B161	MG10a/U4a	0.067	Mosaic of marshy grassland (MG10a) (95%) located immediately north and downslope of the existing A9 carriageway, with conifer forestry located to the north. Area slopes gently to the north. Underlain by humus-iron podzols, low productivity Devensian Till and granodiorite deposits. Likely to be fed by a combination of hill runoff, precipitation and groundwater sources.	Moderately Dominant	Moderate	High
B176	MG10a	0.149	Area of rush-pasture (MG10a) located upslope of the existing A9 road, which slopes steeply towards the south-west. Underlain by humus-iron podzols, low productivity Devensian Till and granodiorite deposits. Likely to be fed by a combination of hill runoff, precipitation and groundwater sources.	Moderately Dominant	Moderate	High
B197	MG9	0.022	Area of marshy grassland located at the base of the valley, with the Highland Mainline Railway to the west and the existing A9 to the east. Area slopes gently to the north-west. Underlain by peaty podzols, low productivity Devensian Till and psammite deposits. Likely to be fed by a combination of hill runoff, precipitation and groundwater sources.	Moderately Dominant	Low	Medium
X049	MG10a	0.137	Area of rush-pasture (MG10a) located east downslope of the B9154 adjacent to extensive peatland. Area slopes moderately north-east from the road, then becomes gentle. A small unnamed watercourse is located 110m south-east, flowing south-east towards the Funtack Burn. Underlain by peaty podzols, low productivity peat and semipelite deposits. Area likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Low	Medium
X041	M6c	0.359	Area of mire (M6c) located along a small drain within the adjacent peatland, flowing east towards the Moy Burn. Area is relatively flat, and underlain by peaty podzols, low productivity peat and semipelite deposits, with peat depths of 3m measured during peat probing surveys. Due to the presence of deep peat deposits and the drain, it is likely this area is primarily fed by surface water flow, runoff and precipitation.	Highly Dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
X053	M6	0.069	Mire (M6) area located along a narrow strip within the wider peatland, located north-east and downslope of the B9154 road, gently sloping towards a small drain to the north-east. Area underlain by peaty podzols, high productivity Glaciofluvial Ice Contact and low productivity semipelite deposits. Area likely to be fed by a combination of surface and groundwater sources.	Highly Dominant	High	Very High
X056	M15c/H9-12/U5	0.060	Mosaic of mire (M15c), heath and grassland within peatland, gently sloping north-east, and located downslope of the B9154 road. Area underlain by peaty podzols, high productivity Glaciofluvial Ice Contact and low productivity semipelite deposits. Nearby peat probing depths are between 0.5m and 0.65m in depth. Given the presence of M15c within an area of peat, this area is not likely to be fed by groundwater, with precipitation and surface run off the dominant supply mechanisms.	Moderately Dominant	Low	Medium
X040	M15c/U5/ M17	0.247	Mosaic of mires including M15c (90%), M17 and grassland within a wider area of peatland, dowslope and north-east of the B9154. A small unnamed watercourse flows along the northern perimeter of the area, flowing east towards the Funtack Burn. Area slopes moderately towards the north-east. Underlain by peaty podzols, low productivity peat and semipelite deposits. Area likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Low	Medium
X034	M6c/U5a	0.223	Mosaic of mire (M6c) (94%) and grassland located north-east of the B9154 road, sloping gently to the east. A small drain runs east along the southern perimeter of the area, flowing into another drain which flows north towards the Funtack Burn. Aerial imagery shows other drains within the peatland immediately north-east of this area. Area underlain by peaty podzols, low productivity peat and psammite deposits. Area likely to be fed by a combination of surface and groundwater sources.	Highly Dominant	Moderate	High
X032	Je	0.075	Area of Juncus Effusus located north-east of the B9154 road, sloping gently to the east along an artificial drain which flows north-east. Aerial imagery shows other drains within the peatland immediately north-east of this area. Area underlain by peaty podzols, low productivity peat and psammite deposits. Area likely to be fed primarily by the watercourse, precipitation and surface water runoff.	Moderately Dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
X014	U5/Je	1.109	Mosaic of Juncus Effusus (25%) and grassland located within peatland, east of the B9154 road and west of the Funtack Burn. Slope angles are relatively flat. A number of drains west of the area flow north into the Funtack Burn. Peat depths recorded in this area showed a maximum depth of 2.05m. Area underlain by peaty podzols, and low productivity peat and psammite deposits. Given the depth of peat in this area, this area is likely to be fed primarily by precipitation and surface runoff.	Moderately Sub-dominant	Low	Medium
X030	M6c	0.169	Mire (M6) area located along a narrow strip along a small watercourse flowing north-east within the wider peatland. Area located north-east and downslope of the B9154 road. Surrounding area modified by drainage ditches within the peatland. Underlain by peaty podzols, low productivity peat and psammite deposits. Area likely to be fed by a combination of surface and groundwater sources. Due to the presence of drainage ditches, and deep peat present in areas of M25 mire, precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.	Highly Dominant	Low	Medium
X028	MG10a	0.232	Narrow area of rush-pasture (MG10a) located along a narrow strip between a grassy hummock to the west and peatland to the east. Downslope and east of the existing B9154 road. Underlain by peaty podzols, high productivity Glaciofluvial Ice Contact deposits and low productivity psammite deposits. This area likely to be fed by a combination of surface runoff, precipitation and groundwater sources.	Moderately Dominant	Moderate	High
X028	MG10a	0.736	Narrow area of rush-pasture (MG10a) located along a narrow strip between areas of deep peat to the east and west. Artificial drain located west of this area flows north to combine with other drains. Downslope and east of the existing B9154 road. Underlain by peaty podzols, high productivity Glaciofluvial Ice Contact deposits and low productivity psammite deposits. Area likely to be fed by a combination of surface runoff, precipitation and groundwater sources.	Moderately Dominant	Moderate	High
X026	MG10a	0.185	Area of rush-pasture (MG10a) located along a narrow strip between areas of deep peat to the west and a grassy hummock to the east. Artificial drain located west of this area flows north to combine with other drains. Downslope	Moderately Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			and east of the existing B9154 road. Underlain by peaty podzols, high productivity Glaciofluvial Ice Contact deposits and low productivity psammite deposits. Area likely to be fed by a combination of surface runoff, precipitation and groundwater sources.			
X019	M6/M20	0.077	Mosaic of mires including M6c (70%) located along a shallow slope, immediately east and downslope of the B9154. Aerial imagery shows a small drain running north and pooling at the north end of the area. Ground Investigation works at Trial pit TPTM3278 indicate the area is underlain by gravels and sand, with groundwater encountered at 3.7mbgl. Due to the ground investigation results, it is unlikely this area is fed by groundwater, and fed by a combination of surface water flow, slope runoff and precipitation.	Highly Dominant	Not GW dependent	Low
X026	MG10a	0.076	Area of rush pasture (MG10a) located adjacent to an existing farm access track, 30m north-east of the B9154 road. Area slopes gently to the east. Two small drains flow north within the peatland area immediately north. Underlain by peaty podzols, low productivity peat and psammite deposits. Area likely to be fed by a combination of surface runoff, precipitation and groundwater sources.	Moderately Dominant	Low	Medium
X015	M6b/M6c	0.128	Mosaic of mires including M6b (60%) and M6c (40%) within peatland area west of B9154 road, in a relatively flat area. Aerial imagery shows the area is coincident with surface water flow towards north where it pools immediately downslope of an access track. Underlain by peaty podzols, low productivity peat and psammite deeposits. Given the presence of surface water drainage, this is most likely to be the primary water source along with precipitation and surface runoff.	Highly Dominant	Moderate	High
X013	U4/Je/U5	3.354	Mosaic of Juncus Effusus (35%) and grassland located within an area of peatland, east of the B9154 road. Peat probing depths record a maximum depth of 4m. Ground Investigation results at TPTM3101 also show the area is underlain by peat and gravel, with a recorded groundwater strike at 3.4mbgl within the gravel layer. Due to the extensive depth of deep peat and groundwater levels, this area is likely to be dominantly fed by precipitation and surface water run-off.	Moderately Sub-dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
X011	MG10a/U4	0.066	Mosaic of rush-pasture (MG10a) (96%) and grassland within a relatively flat area. A small drain flows north-west into a larger drain, which flows north-east towards the Funtack Burn. Area features very shallow slope angles. Underlain by peaty podzols, low productivity peat and psammite deposits. Area likely to be fed by a combination of surface runoff, precipitation and groundwater sources.	Moderately Dominant	Low	Medium
X007	MG10a	0.054	Area of rush-pasture (MG10a) located 90m west of the Funtack Burn and north of Dalmagarry Farm, sloping gently to the east. Underlain by peaty podzols, high productivity Glaciofluvial Ice Contact deposits and low productivity psammite deposits. Area likely to be fed by a combination of surface runoff, precipitation and groundwater sources.	Moderately Dominant	Low	Medium
X006	Je/U5a/U6	0.077	Mosaic of Juncus Effusus (96%) and grassland (U6) (2%) located west of the Funtack Burn, with area sloping gently to the east. Area features very shallow slope angles. Underlain by moderate to high productivity Alluvium deposits and low productivity psammite deposits. Area likely to be fed by a combination of surface runoff, precipitation and groundwater sources.	Moderately Dominant	Low	Medium
X005	U6b/M10a	0.087	Mosaic of mires (M10a) (25%) and grassland (75%) in an area 50m east and upslope of the Funtack Burn. Area slopes gently to the east, with aerial imagery showing a number of natural drains emerging from the hillslope. Located within SEPA 200 year floodplain. Underlain by peaty podzols, high productivity Glaciofluvial Ice Contact deposits and low productivity psammite deposits. Groundwater levels are likely to be shallow. Due to the presence of M10a, this habitat is likely to be dependent on groundwater.	Highly Sub-dominant	High	Very High
X004	MG10a	0.376	Area of rush-pasture (MG10a) located east and downslope of Dalmagarry Farm, which slopes moderately to the east. The Funtack Burn is located 40m east, flowing south. Area underlain by humus-iron podzols, moderate to high productivity alluvium and low productivity psammite deposits. Area likely to be fed by a combination of surface runoff, precipitation and groundwater sources.	Moderately Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
C001	M6c/M10a	0.098	Mosaic of flush (M6c) (85%) and mire (M10a) (15%) running downhill in a narrow channel following the topography of the hillside in a natural drainage channel. Slope angles are moderate to steep, slowing south-east. Located 120m north and upslope of the existing A9 road. Underlain by low productivity psammite deposits. Based on the topographical setting of the habitat, this area is likely to be fed by a combination of surface and groundwater sources.	Highly Dominant	Moderate	High
C050	M6c/U5a	0.193	Mosaic of mire (M6c) (90%) and grassland located the banks of an unnamed tributary of the Allt Creag Bheithin, located downslope of the existing A9 and flowing north-east away from the road. Area slopes gently towards the north. Underlain by peaty podzols, high productivity Glaciofluvial Sheet Deposits and low productivity psammite deposits. Area likely to be fed by a combination of surface runoff, precipitation and groundwater sources.	Highly Dominant	Moderate	High
C049	M6c	0.298	Area of mire (M6c) located at the base of the existing A9 road embankment north of the carriageway, with the area sloping gently to the north-east. A small watercourse flows north-east to the north-west of this area. Underlain by peaty podzols, high productivity Glaciofluvial Sheet Deposits and low productivity psammite deposits. Area likely to be fed by a combination of surface runoff, precipitation and groundwater sources.	Highly Dominant	Moderate	High
C048	M6c	0.301	Area of mire (M6c) located north-east and downslope of the existing A9 road. Area slopes gently to the north. Aerial imagery shows modified drainage within this area, with the drains flowing north. Ground Investigation works at TPTM3156 indicate the area is underlain by approximately 1m of peat, with gravel and clay underlying the peat. Groundwater was encountered at 1m depth. Given the presence of shallow groundwater, this area is likely to be fed by both surface and groundwater sources.	Highly Dominant	High	Very High
C058	M20a/M25a /U5a	0.463	Mosaic of mire (M25a) (10%), mire and grassland located within peatland located north-east and downslope of the existing A9 carriageway. Area features gentle slopes towards the north. Ground Investigation works at trial pit TPTM3153 shows the area is underlain by topsoil and gravel. Peat depths	Moderately Sub-dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			in the area were a maximum of 0.9m depth. Groundwater was encountered at 3.2mbgl. Given the presence of deep peat and M25 habitats, along with recorded groundwater levels this area is not likely to be dependent on groundwater.			
C059	M17a/M20a /M15b/M2	9.605	Mosaic of mires including wet heath (M15b) (5%) across a large area of peatland between the existing A9 to the south, Highland Mainline Railway to the north-east, and a tributary of the Allt Creag Bheithin to the west. Area slopes gently to the north. Peat depths in the area are up to 1.75m in depth. Underlain by peat and peaty soils, low productivity Devensian Till and psammite deposits. Given the presence of M15b with deep peat, this habitat is likely to be fed by surface runoff and precipitation.	Moderately Sub-dominant	Low	Medium
C047	U4b/MG10a /MG9	0.816	Mosaic of marshy grassland (MG9) (5%), rush-pasture (MG10) (15%) and grassland located along the embankment of the existing southbound A9 carriageway. Area slopes moderately to gently north. Ground Investigation works at a number of trial pits immediately north of the area, including TPTM3158, TPTM3156 and TPTM3153 indicate the area is underlain by topsoil, peat, gravel, and sand. The highest groundwater level recorded was 1mbgl. Given the relatively shallow groundwater levels this area is likely to be fed by a combination of surface and groundwater sources.	Moderately Sub-dominant	Moderate	High
C046	M15b/M6c	1.612	Mosaic of mires (M6c) (20%) and wet heath (M15b) (80%) located between the existing A9 carriageway and the Highland Mainline railway. Area slopes gently to the north. Peat probing data shows the maximum recorded peat depth was 0.8m. Ground Investigation works at trial pit TPTM3153 adjacent to the area show the area is underlain by gravel, with groundwater encountered at 3.2mbgl. Due to the presence of M15b and deep peat, along with groundwater level data, this area is not likely to be fed by groundwater sources, with hill runoff and precipitation the main sources.	Moderately Dominant	Low	Medium
C044	M15d	0.235	Area of wet heath (M15d) located in a narrow strip between woodland areas north of the existing A9 road, located at a topographic high point. Area slopes moderately south-east towards the Allt na Loinne Moire watercourse. Ground Investigation works at borehole BHTM3117 show the area is underlain by	Moderately Dominant	Not GW dependent	Low

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			dense sand, gravel and clay deposits. Groundwater monitoring show the highest groundwater level recorded was at 9.79mbgl. Based on groundwater monitoring, this area is likely to be fed by precipitation and surface run-off.			
C043	U5a/MG10a /U4a	0.286	Mosaic of rush-pasture (MG10a) (10%) and grassland located along the north-west banks of the Allt na Loinne Moire watercourse, downslope of the existing A9 road. Area slopes moderately to the south-east. Ground Investigation works at trial pit TPTM3145 show the area is underlain by peat, sand and gravel, with groundwater first encountered at 1.9mbgl. Given the proximity to the watercourse and recorded groundwater level, it is likely this area is fed by a combination of surface and groundwater sources, with groundwater dependency no more than moderate.	Moderately Sub-dominant	Moderate	High
C082	U2a/M6a	0.043	Mosaic of mire (M6c) (20%) and grassland located within a small basin surrounded by conifer plantation, north-east of the A9 carriageway. A pond is located 40m south-east, with another small unnamed watercourse located 80m north, which flows north-east to Loch Moy. The area is underlain by peaty podzols, high productivity Glaciofluvial Ice Contact deposits and low productivity psammite. Given the topographic location, it is likely this area is fed by a combination of surface and groundwater sources.	Highly Sub-dominant	High	Very High
C071	M6c	0.052	Area of mire (M6c) located on the western edge of a small pond in Lynebeg, located north-east of the existing A9 carriageway. The pond sits in a topographic low point downgradient of the road. Pond surveys and hydrogeological surveys indicate this area may be fed by a perched aquifer. Underlain by peaty podzols, high productivity Glaciofluvial Ice Contact deposits and low productivity psammite deposits. This area is primarily fed by groundwater, with some contribution likely from precipitation and surface runoff.	Highly Dominant	Not GW dependent	Low
C070	M6c/M4	0.057	Mosaic of mires (M6c) (80%) located on the southern edge of a small pond in Lynebeg, located north-east of the existing A9 carriageway. The pond sits in a topographic low point downgradient of the road. Pond surveys and hydrogeological surveys indicate this area may be fed by a perched aquifer. Underlain by high productivity Glaciofluvial Ice Contact deposits and low productivity psammite deposits.	Highly Dominant	Not GW dependent	Low

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			This area is likely to be fed by a combination of precipitation, surface runoff and groundwater sources.			
C072	M6c	0.027	Area of mire (M6c) located on the eastern edge of a small pond in Lynebeg, located at the base of a moderate slope from the Lynebeg access road to the north-east. The pond sits in a topographic low point downgradient of the A9 road. Pond surveys and hydrogeological surveys indicate this area may be fed by a perched aquifer. Underlain by high productivity Glaciofluvial Ice Contact deposits and low productivity psammite deposits. This area is likely to be fed by a combination of precipitation, surface runoff and groundwater sources.	Highly Dominant	Not GW dependent	Low
C085	H12a/M6c	0.149	Mosaic of mire (M6c) (20%) and heath located along the banks of a small pond, located north-east of the existing A9 and south-east of the Lynebeg access road. Pond sits in a topographic low, with the area sloping moderately to the north-east. Ground Investigation works at borehole BHTM3101, located 25m south-east show the area, is underlain by fine to medium clayey sand with no groundwater encountered. Further assessments indicate this may pond may be fed by a perched aquifer. This area is likely to be fed by a combination of groundwater, surface runoff and precipitation.	Highly Sub-dominant	Not GW dependent	Low
C092	U4b/MG10a	0.320	Mosaic of rush-pasture (MG10a) (20%) and grassland located downslope along the embankment of the existing southbound A9 carriageway. Area slopes moderately to the north-east. The Caichan na h-Eaglais watercourse flows north-east through the centre of this area after it passes under the A9, towards Loch Moy. Underlain by peaty podzols, high productivity Glaciofluvial Ice Contact deposits and low productivity psammite deposits. This area is likely to be fed by a combination of surface and groundwater sources.	Moderately Sub-dominant	Moderate	High
C117	U4b/M6c	0.134	Mosaic of mire (M6c) (20%) and grassland located along the banks of an unnamed tributary of Loch Moy, flowing north-east from the B9154 towards Loch Moy. Underlain by peaty podzols, Glaciofluvial Ice Contact deposits and low productivity psammite deposits. This area is likely to be fed by a combination of surface water flow, precipitation, surface runoff and groundwater.	Highly Sub-dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
C091	M6a	0.035	Area of mire (M6a) located along the banks of Caochan na h-Eaglais watercourse, flowing north-east towards Loch Moy. The area slopes moderately to the north. The area is bound by an existing access track to the south, an area of hardstanding to the north-west and the Highland Mainline Railway to the north-east. Ground Investigation works at trial pit TPTM3127A located 5m west and adjacent to the area shows it is underlain by made ground and sand deposits, with water encountered at 3.5mbgl. Given the Ground Investigation results, this area is predominantly fed by surface runoff, precipitation and the watercourse.	Highly Dominant	Low	Medium
C094	U4b/MG10a	0.424	Mosaic of rush-pasture (MG10a) (10%) and grassland located along a long narrow area of embankment on the southbound side of the A9. Area slopes gently to the north-east. Area underlain by peaty podzols, low productivity Devensian Till and semipelite deposits. This area is likely to be fed by a combination of precipitation, road runoff and groundwater sources.	Moderately Sub-dominant	Low	Medium
C096	M6a/SW	0.079	Mosaic of mire (M6a) located within an area of conifer plantation, downslope of the existing A9 road sloping gently to the north-east. An unnamed watercourse is located is located 100m downslope and north-east of the area at the B9154 road. Area underlain by peaty podzols, high productivity Glaciofluvial Ice Contact deposits and low productivity semipelite deposits. This area is likely to be fed by a combination of surface and groundwater sources.	Highly Dominant	Moderate	High
C104	MG10a/U4b /MG9	0.288	Mosaic of marshy grassland (MG9), rush-pasture (MG10a) and grassland located along the southbound embankment of the existing A9 immediately north of the Moy Rail bridge. Area slopes gently north-east. Ground Investigation results at trial pit TPTM3290 indicate the area is underlain by topsoil and gravel, with no groundwater encountered to a depth of 4.5m. Trial pit TPTM3119 showed this area was underlain by made ground. Given the Ground Investigation results, this area is likely to be predominantly fed by precipitation and road runoff.	Moderately Dominant	Not GW dependent	Low
C101	U4a/U2a/M 6a	0.062	Mosaic of mire (M6a) (20%) and grassland along a narrow strip within conifer forestry between the existing A9 upslope and the Highland Mainline Railway downslope. Area moderately slope north-east. Area underlain by peaty	Highly Sub-dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			podzols, low productivity Devensian Till and semipelite deposits. This area is likely to be fed by a combination of precipitation, road runoff and groundwater sources.			
C122	MG10a	0.143	Area of rush-pasture (MG10a) located within agricultural land immediately south of Dalmagarry Quarry, east and upslope of the existing A9. Area is relatively flat, with an unnamed watercourse located 35m north flowing downslope towards the Dalmagarry Burn. Ground Investigation works at nearby borehole BHTM3047 is underlain by sand and gravel, which was dry to 7mbgl. Given the topography and GI results, this area is likely to be fed primarily by surface runoff and precipitation, with groundwater dependency no more than moderate.	Highly Sub-dominant	Moderate	High
C123	U4b/BG/MG 10a	0.930	Mosaic of rush pasture (MG10a) (5%), bare ground and grassland located within agricultural land immediately south of Dalmagarry Quarry, east and upslope of the existing A9. Area is relatively flat, with an unnamed watercourse located 10m north flowing downslope towards the Dalmagarry Burn. Ground Investigation works at borehole BHTM3047 is underlain by sand and gravel, which was dry to 7mbgl. Given the topography and GI results, this area is likely to be fed by surface runoff and precipitation.	Moderately Sub-dominant	Not GW dependent	Low
C132	U4b/MG10a	0.171	Mosaic of rush-pasture (MG10a) (20%) and grassland located east and downslope of the existing A9. Area slopes gently east, with a drain located 85m south-east of the area. Area underlain by humus-iron podzols, high productivity Glaciofluvial Sheet Deposits and low productivity granodiorite deposits. Area likely to be fed by a combination of surface water and groundwater sources.	Moderately Sub-dominant	Moderate	High
C130	MG10a/U4b /U5a	0.030	Mosaic of rush-pasture (MG10a) (88%) and grassland located east and downslope of the existing A9. Area slopes gently east, with a steep drop to a drain emerging 60m south-east of the area. Area underlain by high productivity Glaciofluvial Ice Contact Deposits and low productivity granodiorite deposits. Given the topography of this area, with the watercourse emerging lower down	Moderately Sub-dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			the valley, this area is likely to be primarily fed by surface runoff and precipitation.			
C130	MG10a/U4b /U5a	1.123	Mosaic of rush-pasture (MG10a) (88%) and grassland located east and downslope of the existing A9. Area is relatively flat, with a steep drop to a drain emerging 65m east of the area. Underlain by high productivity Glaciofluvial Ice Contact Deposits and low productivity granodiorite deposits. Given the topography of this area, with the watercourse emerging lower down the valley, this area is likely to be primarily fed by surface runoff and precipitation.	Moderately Dominant	Low	Medium
C194	MG10a/U4b	0.870	Mosaic of rush-pasture (MG10a) (90%) and grassland located within arable land immediately east and upslope of the existing A9. Area is relatively flat, with a road drain located along the northbound road verge 40m west and downslope. Ground Investigation works at trial pit TPTM3062 show the area is underlain by made ground, topsoil and sand, with no groundwater encountered to a depth of 4.5m. Based on the GI results, this area is predominantly fed by precipitation and slope runoff.	Moderately Dominant	Not GW dependent	Low
C128	MG10a/U4b	0.124	Mosaic of rush-pasture (MG10a) (90%) and grassland located within arable land, located east and upslope of the existing A9. Area is relatively flat, with a drain located 100m east and 30m lower down the valley. Underlain by humus-iron podzols, high productivity Glaciofluvial Sheet Deposits and low productivity Granodiorite deposits. Given its topographical location, this area is likely to be primarily fed by precipitation and slope runoff.	Moderately Dominant	Low	Medium
C199	U4b/MG10a	0.897	Mosaic of rush-pasture (MG10a) (10%) and grassland located within arable land, east and upslope of the existing A9. Area slopes gently north, with two drains located 50m east and downslope. Underlain by high productivity Glaciofluvial Sheet Deposits and low productivity Granodiorite deposits. Given its topographical location, this area is likely to be primarily fed by precipitation and slope runoff.	Moderately Sub-dominant	Low	Medium
C124	MG10a	0.348	Area of rush-pasture (MG10a) located at the base of the Findhorn Valley, within a relatively flat area. A small drain adjacent to the area flows north along the valley, parallel to the Findhorn. Underlain by moderate to humus-	Moderately Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			iron podzols, high productivity alluvium and low productivity granodiorite deposits. Given the topographical location at the base of the valley this area is likely to be fed by a combination of surface and groundwater sources.			
C125	MG10a	0.178	Area of rush-pasture (MG10a) located at the base of the Findhorn Valley, within a relatively flat area. A small drain adjacent to the area flows north along the valley, parallel to the Findhorn. Underlain by moderate to humus-iron podzols, high productivity alluvium and low productivity granodiorite deposits. Given the topographical location at the base of the valley this area is likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Moderate	High
C189	U5a/MG9	0.356	Mosaic of marshy grassland (MG9) (5%) and grassland located downslope of the existing A9 road. Area slopes moderately east towards a drain, which flows north-east then north towards the Findhorn. Ground Investigation works at borehole BHTM3041 shows the area is underlain by clay and sand deposits, with groundwater encountered at 9mbgl. Given the topography and recorded groundwater levels, this area is not likely to be dependent on groundwater.	Moderately Sub-dominant	Not GW dependent	Low
C148	U6z/M3	0.226	Mosaic of grassland (U6z) (92%) and mire located downslope of the existing A9 at the base of the slope. A drain runs parallel to the area, flowing north towards Invereen. A pond is located 15m to the south. Ground Investigation works at BHTM3038 show the area is underlain by peat and clayey sand, with groundwater encountered at 1.0mbgl in artesian conditions. Site surveys noted the area is associated with drainage channel at edge of field and natural pooling of water due to topographical features. Based on the local hydrology, topography and ground conditions it is likely this area is fed by surface water features.	Moderately Dominant	Moderate	High
C147	M6b	0.067	Area of mire (M6b) habitat located downslope of the existing A9 at the base of the slope. A drain runs parallel to the area, flowing north towards Invereen. A pond is located immediately to the south. Ground Investigation works at trial pit TPTM3051 immediately upslope show the area is underlain by peat and gravel, with groundwater encountered at 1.3mbgl.	Highly Dominant	High	Very High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			Based on the local hydrology, topography and ground conditions it is likely this area is fed by a combination of surface water and groundwater sources.			
C144	MG10a/MG 9/M6d	0.866	Mosaic of rush-pasture (MG10a) (80%), mire (M9d) (10%) and marshy grassland (MG9) (10%) habitats located east and downslope of the existing A9. An artificial drain flows through this area north-east towards Invereen. Ground Investigation works at trial pit TPTM3051 immediately upslope show the area is underlain by peat and gravel, with groundwater encountered at 1.3mbgl. Borehole BHTM3038 also in this area indicates area is underlain by peat and clayey sand, with groundwater encountered at 2.5mbgl in artesian conditions. Based on the local hydrology, topography and ground conditions it is likely this area is fed by a combination of surface water and groundwater sources.	Highly Sub-dominant	High	Very High
C188	U5a/U6d/U4 a	0.752	Mosaic of grassland including U6d (20%) located at the base of the valley, with the existing A9 located upslope to the west and the River Findhorn located to the east. A small pond is located 25m west and upslope. Underlain by moderate to high productivity alluvium deposits and low productivity granodiorite deposits. Given the topographical location and proximity to the River Findhorn it is likely this area is fed by a combination of surface runoff, precipitation and groundwater sources.	Moderately Sub-dominant	Moderate	High
C140	MG10a	0.067	Area of grassland (MG10a) located at the base of the valley, with the existing A9 located upslope to the west and the River Findhorn located to the east. Underlain by humus-iron podzols, moderate to high productivity alluvium deposits and low productivity granodiorite deposits. Given the topographical location and proximity to the River Findhorn it is likely this area is fed by a combination of surface runoff, precipitation and groundwater sources.	Moderately Dominant	Moderate	High
C017	M19a/M23b	0.858	Mosaic of rush-pasture (M23b) (5%) and mire along a forest ride within conifer plantation, located along a hillslide which slopes gently east towards the River Findhorn. Two unnamed watercourse flows east through this area into the Findhorn. Ground Investigation works at trial pit TPTM3033 located 25m west show the area is underlain by peat and gravel deposits, with	Highly Sub-dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			groundwater encountered at 4.5mbgl. This area is likely to be fed by a combination of surface water and groundwater sources.			
C019	MG10a	0.032	Small area of marshy grassland (MG10a) located east of the property Tigh an Allt, along the banks of an unnamed watercourse, which flows east into the River Findhorn. Underlain by humus-iron podzols, moderate to high productivity alluvium and low productivity granodiorite deposits. Given its topographic location at the base of the valley and adjacent to a watercourse, this area is likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Moderate	High
C020	MG9/U4a	0.204	Mosaic of marshy grassland (MG9) (95%) and grassland located at the base of the valley downslope of the A9 and conifer plantation, along the banks of the River Findhorn and its tributary. Area features moderate to shallow slope angles, sloping to the east. Area underlain by humus-iron podzols, moderate to high productivity alluvium deposits and low productivity granodiorite deposits. Given its topographic location at the base of the valley and adjacent to a watercourse, this area is likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Moderate	High
C021	M23b	0.236	Area of rush-pasture (M23b) located in a flat area along the banks of the River Findhorn and downslope of the existing A9. Area underlain by humus-iron podzols, moderate to high productivity alluvium deposits and low productivity granodiorite deposits. Given its topographic location at the base of the valley and adjacent to a watercourse, this area is likely to be fed by a combination of surface and groundwater sources.	Highly Dominant	Moderate	High
C022	MG9/MG10a	0.163	Mosaic of rush pasture (MG9) (95%) and marshy grassland (MG10) (5%) located in a flat area along the banks of the River Findhorn and downslope of the existing A9. Area underlain by humus-iron podzols, moderate to high productivity alluvium deposits and low productivity granodiorite deposits. Given its topographic location at the base of the valley and adjacent to a watercourse, this area is likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
C023	M23b	0.103	Area of rush-pasture (M23b) which moderately slopes east towards the River Findhorn, downslope of the existing A9. Area underlain by humus-iron podzols, moderate to high productivity alluvium deposits and low productivity granodiorite deposits. Given its topographic location at the base of the valley and adjacent to a watercourse, this area is likely to be fed by a combination of surface and groundwater sources.	Highly Dominant	Moderate	High
C024	U4b/MG10a /U2a	0.485	Mosaic of rush pasture (MG10a) (15%) which moderately slopes east towards the River Findhorn, downslope of the existing A9. Area underlain by humus-iron podzols, moderate to high productivity alluvium deposits and low productivity granodiorite deposits. Given its topographic location at the base of the valley and adjacent to a watercourse, this area is likely to be fed by a combination of surface and groundwater sources.	Moderately Sub-dominant	Moderate	High
C033	MG10a	0.966	Area of rush pasture (MG10a) located adjacent to the existing Tomatin North Junction, downslope and east of the A9 carriageway. Area is relatively flat with a drain at the northern perimeter of the field flowing east into the River Findhorn. Ground Investigation works at trial pit TPTM3033 located 25m north shows the area is underlain by peat and gravel deposits, with groundwater encountered at 4.5mbgl. Based on the ground investigation results, this area is likely to be fed primarily by surface run-off and precipitation.	Moderately Dominant	Low	Medium
C026	M23b	0.072	Area of rush-pasture (M23b) located along the north-western banks of the Allt na Frithe watercourse, immediately upstream of where it joins the River Findhorn. Area slopes moderately to the east. A small drain also flows east through this area into the Allt na Frithe. Located within the SEPA 200 year floodplain. Ground Investigation works at borehole BHTM3021 reveal the area is underlain by peat and soil, with no groundwater encountered during drilling. Given its proximity to the watercourse and location within floodplain, this area is likely to be fed by a combination of surface and groundwater sources.	Highly Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
C180	M19a/MG9/ U5d	0.361	Mosaic of marshy grassland (MG9) (10%), mire and grassland located between three drains which flow north into the main drain flowing north-west. Area is relatively shallow and slopes to the north. Ground Investigation works at borehole BHTM3016 10m to the south show the area is underlain by deep peat and gravel deposits, with groundwater encountered at 1.5mbgl. Given the topography at the base of the valley, and presence of shallow groundwater, this area is likely to be fed by a combination of surface and groundwater sources.	Moderately Sub-dominant	Moderate	High
C182	MG10a	0.789	Area of marshy grassland (MG10a) located north of a field drain and upslope of the River Findhorn, both downslope of the existing A9 road. Located with SEPA 200 year floodplain. Underlain by humus-iron podzols, moderate to high productivity alluvium and low productivity granodiorite deposits. Given its topographical location at the base of the valley and location within the floodplain, this area is likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Moderate	High
C184	MG9/MG1/ U4a	0.458	Mosaic of marshy grassland (MG9) (80%) and grassland located along the southern banks of the River Findhorn. Area slopes gently to the north, located downslope from the existing A9 road. Underlain by humus-iron podzols, moderate to high productivity alluvium and low productivity granodiorite deposits. Given its topographical location at the base of the valley and location within the floodplain, this area is likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Moderate	High
C183	MG10a/M25 b	0.099	Mosaic of marshy grassland (MG10a) (80%) and mire (M25a) (20%) located along the southern banks of the River Findhorn downslope of the existing A9 scheme. Area slopes gently north. A small tributary of the Findhorn flows north-west through the area. Peat depths of 0.7m were recorded in this area, with the area underlain by moderate to high productivity River Terrace deposits and low productivity granodiorite deposits. Given the presence of M25a mire and deep peat, this area is likely to be fed predominantly by surface water flow, precipitation and hill runoff.	Moderately Dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
C185	M19a/M19b /M25b/U5d	0.592	Mosaic of mires including M25b (10%) located upslope of the southern banks of the River Findhorn, downslope of the existing A9 scheme. Area slopes gently north. A small tributary of the Findhorn flows north-west through the area. Peat depths of 1.8m were recorded in this area. Ground Investigation works at trial pit TPTM3022 show the area is underlain by peat, sand and gravel, and groundwater encountered below the peat at 1.8mbgl. Given the presence of M25a mire and deep peat, this area is likely to be fed predominantly by surface water flow, precipitation and hill runoff.	Moderately Sub-dominant	Low	Medium
C184	MG9/MG1 /U4a	0.130	Mosaic of marshy grassland (MG9) (80%), mire and grassland located north-east and downslope of the existing A9 and an access track. Area slopes moderately to the north-east. The River Findhorn is located 25m north, flowing west. Underlain by humus-iron podzols, high productivity Glaciofluvial Sheet Deposits and low productivity granodiorite deposits. This location is likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Moderate	High
C155	MG10a	0.071	Area of rush-pasture (MG10a) located at the top of a steep slope, which slopes north-east away from the existing A9 road. A small drain is located 85m east, which flows north-east towards the River Findhorn. Ground Investigation works at adjacent borehole BHTM3008 shows the area is underlain by sandy silt, with the monitoring recorded as dry. Based on groundwater monitoring results, this area is fed primarily by surface water sources.	Moderately Dominant	Low	Medium
C160	MG9/MG10 a	0.065	Mosaic of marshy grassland (MG9) (88%) and rush-pasture (MG10a) (12%) located at the top of a steep slope, which slopes north-east away from the existing A9 road. A small drain is located 70m north-east at the base of the slope, which flows north-east towards the River Findhorn. Ground Investigation works at adjacent borehole BHTM3008 shows the area is underlain by sandy silt, with the monitoring recorded as dry. Based on groundwater monitoring results, this area is fed by surface water sources.	Moderately Dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
C168	M6a/MG9	0.171	Mosaic of mire (M6a) (80%) and marshy grassland (MG9) (20%) located the banks of an unnamed drain flowing north-east at the base of the hill. The existing A9 is located approx. 75m to the south-west. Area slopes gently to the north. Underlain by humus-iron podzols, low productivity Devensian Till and granodiorite deposits. Area likely to be fed by a combination of surface water and groundwater sources.	Highly Dominant	Moderate	High
C169	U5d/M6a	0.294	Mosaic of mire (M6a) (10%) and grassland located at the base of a slope between two drainage ditches, with an area of conifer plantation to the south. Both drains merge north of the area, to flow north-west towards the River Findhorn. Area slopes gently to the north. Underlain by humus-iron podzols, moderate to high productivity River Terrace Deposits and low productivity granodiorite deposits. This area is likely to be fed by a combination of surface and groundwater sources.	Highly Sub-dominant	High	Very High
C170	U5d/U5b/ MG9	0.104	Mosaic of marshy grassland (MG9) (5%) and grassland located at the base of a slope immediately west of a dmall drainage ditch, with an area of conifer plantation to the west. Area slopes gently to the north. OS mapping indicates issues in the west at the start of the drain. Underlain by a combination of low productivity peat in the north, and moderate to high productivity River Terrace Deposits in the south, and low productivity granodiorite bedrock deposits throughout. This area is likely to be fed by a combination of surface and groundwater sources.	Moderately Sub-dominant	Moderate	High
C173	W4c/W17b	1.729	Mosaic of woodland (W4c) (80%) located along a gently sloping area at the base of a hill, between the existing A9 to the south and the River Findhorn to the north. Two drains border the area, the first flowing north-east to the west of the area, and the second flowing around the south and eastern perimeters of the area to the north-west. Area underlain by humus-iron podzols, low productivity peat and granodiorite deposits. Given the low productivity peat deposits, this area is likely to be primarily fed by surface water sources.	Highly Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
C174	M6c/U4a	0.231	Mosaic of mire (M6c) (80%) and woodland located along a small drain, flowing north-east towards the River Findhorn. Located at the base of a steep slope, north-east of the existing A9 road, with the area sloping gently to the north. Underlain by humus-iron podzols, low productivity peat and granodiorite deposits. Precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms	Highly Dominant	Moderate	High
C176	MG9/MG10 a	0.127	Mosaic of marshy grassland (MG9) (90%) and rush pasture (MG10) (10%) located along the banks of two drains, located north-east downslope of the existing A9. The first drain flows north, where it flows into the second drain, which flows north-west along a field boundary. Area slopes gently to the north. Underlain by humus-iron podzols, low productivity peat and granodiorite deposits. Precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.	Moderately Dominant	Low	Medium
C163	M6c	0.018	Area of mire (M6c) located north-east and downslope of the A9 at the base of the embankment. Area slopes gently to the north-east, with a drain located north-east of the area. Peat probing results show peat depths of up to 2.1m, with area underlain by humus-iron podzols, low productivity peat and granodiorite deposits. Precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.	Highly Dominant	Moderate	High
C187	M25b/M20/ U5d	0.047	Mosaic of mire (M25b) (80%), mire and grassland located downslope of the existing A9 road on relatively steep slopes. A small drain is located 50m east and downslope of the area. A peat depth of 0.5m was measured in this area. Underlain by humus-iron podzols, low productivity Devensian Till and granodiorite deposits. Given the presence of peat and M25, this area is likely to be fed by precipitation and hill runoff.	Moderately Dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
C166	M6b	0.202	Area of mire (M6c) located north-east and downslope of the A9 at the base of the embankment. Area slopes gently to the north-west, with a drain located at the north of the area which flows north-east. Peat probing results show peat depths of up to 1m. Underlain by humus-iron podzols, low productivity peat and granodiorite deposits. Precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.	Highly Dominant	Moderate	High
C179	W4c	3.013	Large area of wet woodland (W4c) located north-east of the existing A9 road, downslope of the road at the base of the hill. Area slopes steeply in the south-west of this area, and gently slopes to the north in the remaining area. A number of artificial drains are present in this area, generally flowing north, then north-west towards the River Findhorn. Peat probing results show the area is underlain by peat, up to 2.2m in depth. Ground Investigation results at BHTM3016 show the area is underlain by peat, gravel and clay, with ground monitoring results show the highest groundwater level at 0.3m. Given the extensive coverage of deep peat, this area is likely to be fed primarily by precipitation, hill runoff and surface water features.	Highly Dominant	Moderate	High
C099	U4/M6a	0.064	Mosaic of mire (M6c) (20%) and woodland located adjacent to the southbound A9 carriageway, and upslope of the Highland Mainline Railway. Area slopes moderately to the north-east. Underlain by humus-iron podzols, low productivity Devensian Till and semipelite deposits. Likely to be fed by a combination of surface water and groundwater deposits.	Highly Sub-dominant	Moderate	High
C136	MG10a	0.038	Area of rush-pasture (MG10a) located along the banks of a small drain at the base of a relatively steep slope at Invereen. The drain flows south-east into a larger drain which flows east then north. The River Findhorn is located 200m south-east. Underlain by humus-iron podzols, moderate to high productivity Alluvial Fan deposits and low productivity granodiorite deposits. The area and the drain itself is likely to be fed by a combination of hill runoff, precipitation and groundwater sources.	Moderately Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
C164	M6c	0.051	Area of mire (M6c) located along the base of the A9 embankment slope. Area slopes gently north-east, with a drain flowing north-east through the area. The area is underlain by humus-iron podzols, low productivity peat and granodiorite deposits, with a maximum depth of 1.83m measured. Given the presence of deep peat, this area is likely to be fed primarily by precipitation, hill runoff and surface water features.	Highly Dominant	Moderate	High
C186	M25b/M20 /U5d	0.276	Mosaic of mire (M25b) (80%), mire and grassland located downslope of the existing A9 road, which slopes relatively steeply to the north-east then becomes more gentle in gradient. Two drains are located north-east of the area, which flow north towards the Findhorn. Peat probing results show peat depths of up to 2m in this area. Given the presence of deep peat and M25 mire habitat, this area is likely to be fed by precipitation and hill runoff.	Moderately Dominant	Low	Medium
J148	M6c/W19/U 4	0.669	Mosaic of mire (M6c) (80%), woodland and grassland located along the banks of an unnamed watercourse, flowing north-east through Lynemore towards the existing A9 road. Area slopes gently north-east, becoming steeper downgradient. Underlain by peaty gleys, a mix of alluvium and Devensian Till deposits of high to low productivity, as well as low productivity psammite deposits. This area is likely to be fed by a combination of surface water and groundwater sources.	Highly Dominant	Moderate	High
J150	MG10a	0.128	Area of rush-pasture (MG10a) located along the northern banks of an unnamed watercourse, downslope of the property at Lynemore, flowing north-east towards the existing A9 road. Area slopes gently to moderately east. Underlain by peaty gleys, low productivity Devensian Till and psammite deposits. This area is likely to be fed by a combination of surface water and groundwater sources.	Moderately Dominant	Low	Medium
J140	H12b/W19a /M23b/U4/ U5	2.998	Mosaic of rush-pasture (M23b) (10%), heath and grassland located south and upslope of an unnamed tributary of Loch Moy. The area moderately slopes north/north-east towards the watercourse. Area underlain by peaty gleys, low productivity Devensian Till and psammite deposits.	Highly Sub-dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			Given the topography of the area, this area is likely to be fed by a combination of hill runoff, precipitation and groundwater.			
J154	U4b/MG10a	0.376	Mosaic of rush-pasture (MG10a) (5%) and grassland, located south and adjacent to the Lynemore access track. Area slopes moderately east. Area lies parallel to an unnamed watercourse to the south, which flows north-east towards Lynebeg. Area underlain by peaty gleys, low productivity Devensian Till and psammite deposits. Given the topography of the area, this area is likely to be fed by a combination of hill runoff, precipitation and groundwater.	Moderately Sub-dominant	Low	Medium
J138	M15	0.692	Area of wet heath (M15) located south and upslope of the Lynebeg area. Area slopes gently to the north. A small watercourse is located 20m north of the area, flowing north towards the existing A9 road. Ground Investigation works at trial pit TPTM3210 show the area is underlain by topsoil, sand and clay, with no groundwater encountered to 3.6mbgl. Based on Ground Investigation results, and the presence of a clay layer, it is unlikely this area is fed by groundwater, with hill runoff and precipitation the main sources.	Moderately Dominant	Not GW dependent	Low
J135	M23b	0.093	Area of rush-pasture (M23b) located south and upslope of the Lynebeg area. Area gently slopes north-east. The Caochan na h-Eaglais is located 20m east, flowing north-east towards the existing A9 road. Underlain by peaty gleys, non-significant aquifers comprising Hummocky (Moundy) glacial deposits and psammite deposits. Given the underlying low productivity deposits, this area is likely to be predominantly fed by hill runoff and precipitation.	Highly Dominant	Moderate	High
J133	M19/H12/ W19a/M6c	1.892	Mosaic of mire (M6c) (2%), blanket mire, heath and woodland located on the hillslope south of Lynebeg. Area slopes gently to moderately north-east, towards the Caochan na h-Eaglais watercourse, which flows north-east towards the existing A9 road. Area underlain by peaty gleys, low productivity Devensian Till and psammite deposits. Given the topography of the area, this area is likely to be fed by a combination of hill runoff, surface water flow, precipitation and groundwater.	Highly Sub-dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
J129	M15/H9-12	0.441	Mosaic of wet heath (M15) (90%) and dry heath located south of Lynebeg, in an area with undulating gentle slopes. The Caochan na h-Eaglais watercourse flows north-east through the area. Area underlain by peaty gleys, low productivity Devensian Till and psammite deposits. Given the topography of the area, this area is likely to be fed by a combination of hill runoff, surface water flow, precipitation and groundwater.	Moderately Dominant	Low	Medium
J132	M19/M20/M 6c	0.384	Mosaic of mires including M6c (5%) located south of Lynebeg, in an area with undulating gentle slopes. The Caochan na h-Eaglais watercourse flows north-east through this area. Area underlain by peaty gleys, low productivity Devensian Till and psammite deposits. Given the topography of the area, this area is likely to be fed by a combination of hill runoff, surface water flow, precipitation and groundwater.	Highly Sub-dominant	Moderate	High
J125	W17b/W4c/ H12a/M6c	0.662	Mosaic of woodland (W4c) (30%), mire (M6c) (5%) and heath immediately south and upslope of the existing Lynebeg access track. Area slopes gently to the east, with the Caochan na h-Eaglais watercourse located to the east. Ground Investigation works at trial pit TPTM3208 show the area is underlain by topsoil and gravel, with water encountered at 1.2mbgl. Due to the relatively shallow groundwater conditions, this area is likely to be fed by a combination of groundwater and surface water sources.	Highly Sub-dominant	High	Very High
J166	MG9/U4	0.747	Area of marshy grassland (MG9) (80%) and grassland located along the banks of an unnamed watercourse, flowing north towards the existing A9 through an area of conifer plantation. Area features moderately steep banks along the watercourse. Ground Investigation works at borehole BHTM3107 immediately east of the area show it is underlain by topsoil, gravel, sand and clay, with groundwater monitoring showing the highest groundwater level at 7.16mbgl. Given the depth of groundwater during monitoring, this area is fed by surface runoff, precipitation and the watercourse.	Moderately Dominant	Low	Medium
J110	W4c	0.899	Area of wet woodland (W4c) located south-west and upslope of the existing A9 carriageway south of Lynebeg, bound by areas of conifer plantaiton to the west and southern sides. Area slopes gently to moderately north-east. Area underlain by peaty gleys, low productivity Devensian Till and psammite deposits.	Highly Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			Given the topography of the area, this area is likely to be fed by a combination of hill runoff, surface water flow, precipitation and groundwater.			
J102	M6c	0.020	Area of mire (M6c) located along a forest ride downslope of an area of conifer plantation, upslope of the existing A9 road. Area slopes moderately north-east. Area underlain by peaty podzols, low productivity Devensian Till and psammite deposits. Due to the presence of conifer plantation immediately upslope of this area, featuring modified drainage ditches, this area is likely to be fed by artificial drainage, surface runoff and precipitation.	Highly Dominant	Moderate	High
J073	M16d/U5	0.191	Mosaic of wet heath (M16d) (95%) and grassland located on the hill slopes south-west and upslope of the existing A9 road. Peat probing results in this area showed a maximum peat depth of 0.6m. Area slopes moderately to the north-east. Ground Investigation results at nearby borehole BHTM3237 located 20m south, show the area is underlain by sand and gravel deposits, with groundwater encountered at 2mbgl. Groundwater monitoring at borehole BHTM3090 located 30m north-east and downslope, reported groundwater levels at 1.89mbgl. Given the presence of M16 and peat/peaty soils, and recorded groundwater levels, this area is likely to be fed by hill runoff and precipitation.	Highly Dominant	Low	Medium
J074	U6a	0.021	Area of grassland (U6a) located along the hillslopes south-west of the existing A9, south of Moy. Area slopes moderately north-east down the hill. Ground Investigation works at nearby borehole BHTM3237, located 10m south-east, show the area is underlain by sand and gravel deposits, with groundwater encountered at a depth of 2m. Given the GI results, this area is likely to be fed by a combination of groundwater, hill-runoff and precipitation.	Moderately Dominant	Moderate	High
J076	U6	0.068	Area of grassland (U6) located on a hill slope, with an existing estate track up gradient and to the south, and the existing A9 located downslope to the north. Area slopes moderately to the north-west, with underlying deposits comprising of peaty podzols, low productivity Devensian Till and psammite. This area is likely to be fed by a combination of groundwater, hill-runoff and precipitation.	Moderately Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
J098	M6c	0.020	Area of mire (M6c) located on the hillslope up gradient of the A9, with conifer plantation located north-west of the area, and an estate access track located upslope. Area slopes moderately to the north-east. Area slopes moderately to the north-west, with underlying deposits comprising of peaty podzols, low productivity Devensian Till and psammite. Given the topographic setting and poorly draining ground conditions it is considered likely that this area is dominated by surface water flows and collection, with groundwater dependence considered to be low.	Highly Dominant	Moderate	High
J075	M15c/H12c	1.642	Mosaic of wet heath (M15c) (90%) and heath located across a large proportion of a hill slope, with the existing A9 located at the base of the slope to the north-east, and bound by an estate access track upslope to the south. Area features moderate slope angles, generally sloping to the north-east. Ground Investigation results at nearby borehole BHTM3237 located 20m east show the area is underlain by sand and gravel deposits, with groundwater encountered at 2mbgl. Based on GI results, this area is likely to be fed by a combination of groundwater, hill-runoff and precipitation.	Moderately Dominant	Moderate	High
J083	M15b	0.501	Area of wet heath (M15b) located on the hillslopes above the existing A9 road, west of the Moy Rail bridge. The area slopes moderately to the north-east. Peat probing results show a maximum peat depth of 0.8m in this area. Ground Investigation works immediately downslope of the area at BHTM3085 show the area is underlain by topsoil, sand and gravel deposits, with groundwater encountered at 4mbgl. Given the low permeability of the underlying deposits and the depth to groundwater, this area is likely to fed by a combination of surface and groundwater sources.	Moderately Dominant	Low	Medium
J082	M25	0.111	Area of mire (M25) located immediately upslope and south-west of the existing A9 road, with the Highland Mainline Railway located downslope to the east within a cutting. Area slopes moderately to the north-east. Ground Investigation works are borehole BHTM3238 show the area is underlain by peat, gravel and sand, with a groundwater strike recorded at 6.2mbgl. Given the low groundwater levels, this area is likely to be predominantly fed by hill runoff and precipitation.	Moderately Dominant	Not GW dependent	Low

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
J081	H10a/M15b /H9-12	4.532	Mosaic comprises of wet heath (M15b) (40%) and heath, located south-east and upslope of the existing A9 road. Area slopes moderately north-east. Peat probing results show a maximum recorded peat depth of 0.8m. Ground Investigation works at borehole BHTM3236 shows the area is underlain by topsoil, sand and gravel deposits, and gneiss bedrock, with no groundwater encountered during drilling or monitoring. Borehole BHTM3085 located in the north of the area at the base of the slope, shows this area is underlain by topsoil and sand, with groundwater encountered at 4mbgl. Given the lack of groundwater, and wet heath occurring on deep peat, this area is likely to be fed by surface water sources.	Moderately Sub-dominant	Not GW dependent	Low
J050	M19a/M6c	5.114	Mosaic of mires including M6c (3% of area), located south-west and upslope of the existing A9. Area slopes moderately north-east. Ground Investigation works at BHTM3079 within the area show it is underlain by peat, gravel and sand, with seepage encountered at a depth of 0.3m. This area is likely to be fed by a combination of groundwater, hill runoff and precipitation.	Highly Sub-dominant	High	Very High
J049	U6/U5	0.152	Mosaic of grassland including U6 (70%) located south-west and upslope of the Highland Mainline Railway, south of Moy. Area slopes moderately to the north-east. A small watercourse is located 120m south-east of the area, flowing east towards the railway. Area underlain by peaty podzols, and low productivity Devensian Till and psammite deposits. This area is likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Moderate	High
J047	M15b/M19/ U5	2.699	Mosaic of wet heath (M15b) (85%), mire and grassland located south-west and upslope of the Highland Mainline Railway, south of Moy. Area slopes moderately to the north-east. A small watercourse is located to the south of the area, flowing east towards the railway. Peat probing results show the area is underlain by shallow peaty podzol soils of up to 0.2m in depth. Area is underlain by low productivity Devensian Till and psammite deposits. This area is likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Low	Medium
J046	M25a	0.211	Area of mire (M25a) located south-west and adjacent to the Highland Mainline Railway at the base of the hill slope. A small unnamed watercourse	Moderately Dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			to the south of the area flows east towards the Railway. Area underlain by peaty podzols, low productivity Devensian Till and psammite deposits. Surface water likely to collect at the base of the slope along the railway boundary, feeding into the watercourse to the south. This area is likely to be fed by a combination of surface and groundwater sources.			
J044	M6c	0.125	Area of mire (M6c) running along the banks of an unnamed watercourse west of the Highland Mainline Railway and the existing A9. The watercourse flows east under both the railway and road, towards the Funtack Burn. Area underlain by peaty podzols, low productivity Devensian Till and psammite deposits. Surface water likely to collect at the base of the slope along the railway boundary, feeding into the watercourse to the south. This area is likely to be fed by a combination of surface and groundwater sources.	Highly Dominant	Moderate	High
J041	M25a	0.396	Area of mire (M25a) located south-west and upslope of the Highland Mainline Railway at the base of the hill slope. A small unnamed watercourse to the south of the area flows east towards the Railway. Area underlain by peaty podzols, low productivity Devensian Till and psammite deposits. Surface water likely to collect at the base of the slope along the railway boundary, feeding into the watercourse to the south. This area is likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Low	Medium
J040	M16d/U6/M25	0.937	Mosaic of wet heath (M16d) (90%), grassland (U6) (5%) and mire (M25) (5%) located upslope of the Highland Mainline Railway, sloping moderately to the north-east. A small watercourse, located to the north of this area, flows east down the slope towards the railway where it flows towards the Funtack Burn. Area is underlain by peaty podzols, and low productivity Devensian Till and psammite deposits. Area likely to be fed by a combination of surface water and groundwater deposits.	Highly Dominant	Moderate	High
J025	MG10a	0.079	Area of rush pasture (MG10a) located along the northern banks of the Dalmagarry Burn, with the Highland Mainline Railway embankment located immediately north-west. Located within the SEPA 200 year floodplain for the watercourse, which flows east under the railway and existing A9 road. Area	Moderately Dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			underlain by peaty podzols, moderate to high productivity Alluvial Fan deposits and low productivity psammite deposits. Given the location adjacent to the burn, this area is likely to feature relative shallow groundwater levels, with the main sources of water being precipitation, flow from the Dalmagarry burn and hill runoff.			
J024	MG10a	0.085	Area of rush pasture (MG10a) located along the northern banks of the Dalmagarry Burn, with the Highland Mainline Railway embankment located east. Located within the SEPA 200 year floodplain for the watercourse, which flows east under the railway and existing A9 road. Area underlain by peaty podzols, moderate to high productivity Alluvial Fan deposits and low productivity psammite deposits. Given the location adjacent to the burn, this area is likely to feature relative shallow groundwater levels, with the main sources of water being precipitation, flow from the Dalmagarry burn and hill runoff.	Moderately Dominant	Low	Medium
J021	W18c/CP/U4b/W4	3.378	Mosaic of woodland (W4) (5%), conifer plantation and grassland located upslope of properties in the north of Tomatin and the existing A9 road, with the Highland Mainline Railway located north-west and upslope. The area slopes gently to the south-east. An unnamed tributary of the River Findhorn, located to the south of this area, flows north-east towards the A9 road. Underlain by humus-iron podzols, low productivity peat and granodiorite deposits. Peat probing surveys within this area showed a maximum peat depth of 1.2m in the north of this area. This area is likely to be fed by a combination of precipitation, surface water runoff and groundwater sources.	Highly Sub-dominant	Moderate	High
J042	M6c	0.086	Area of mire (M6c) located on the hillslopes of Carn na Loine, west and upslope of the Highland Mainline Railway and existing A9 road. Aerial imagery shows a small drain emerging from this area, flowing east downslope towards the railway, with issues marked on OS mapping indicating spring conditions. Underlain by peaty podzols, low productivity Devensian Till and psammite deposits. Given the topography and water emerging from the hillslope, this habitat and watercourse are likely to be fed by groundwater, as well as precipitation and hill runoff.	Highly Dominant	High	Very High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
BH05	M6	0.064	Area of mire (M6) located west and downslope of an existing forestry track within an area of conifer plantation. The existing A9 is located approx. 50m east and upslope. Area slopes gently north-west towards the Mid Lairgs burn, which flows north through the area. Surrounding conifer forestry features modified drainage ditches. Area underlain by peaty podzols, low productivity Devensian Till and psammite deposits. Given the topographic setting and poorly draining ground conditions it is considered likely that this area is dominated by surface water flows and collection, with groundwater dependence considered low.	Highly Dominant	Low	Medium
BH06	M6a	0.017	Area of mire (M6a) located west and downslope of a forestry track, with an area of conifer forestry located immediately upslope to the east. The Midlairgs Burn, which flows north to the area, is located 100m downslope and west of the area. Area slopes gently west towards the burn. Given the modified drainage surrounding the area, and poorly draining ground conditions it is considered likely that this area is dominated by surface water flows and collection, with groundwater dependence considered low.	Highly Dominant	Low	Medium
BH16	M23b/S9/M6	0.295	Mosaic of mire (M6) (3%), rush pasture (M23b) (57%) and swamp within a waterlogged area adjacent to the Midlairgs burn and its tributary, joining and flowing west from the area. An existing forestry track is located immediately east and upslope of the area. The area is relatively flat. Aerial imagery shows the modified drainage ditches in the area. Peat probing depths show a maximum depth of 2.17m, with the area noted to be wet underfoot during walkovers. Area underlain by peaty podzols, low productivity peat and psammite deposits. Given the presence of deep peat in the area and modified drainage ditches, the predominant water sources are from the watercourse, precipitation and surface water runoff.	Highly Dominant	Low	Medium
BH15	M6c/M4/MG10a/M19a/U4a/MG9	0.822	Mosaic of mire (M6c) (80%), rush-pasture (MG10) (3%), marshy grassland (MG9) (1%) and grassland along the Midlairgs burn, which flows north then west through a large area of conifer forestry at the base of the valley. Area slopes gently to the north. A forestry access track and the existing A9 are both located upslope to the north-east. Area underlain by peaty podzols, low productivity peat and psammite deposits. Precipitation and surface generated run-off from surrounding slopes and	Highly Dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			artificial drainage ditches are considered to be the dominant water supply mechanisms.			
BH19	M6c/M4/U4a	0.856	Mosaic of mires including M6c (90%) along the Midlairgs burn, which flows north then west through a large area of conifer forestry at the base of the valley. Area slopes gently north-west then west along the valley. The adjacent conifer forestry features modified drainage ditches. A forestry access track and the existing A9 are both located upslope to the north. Area underlain by peaty podzols, low productivity peat and psammite deposits. Precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.	Highly Dominant	Low	Medium
BH22	MG10a/MG9/M6c/U4a	0.296	Mosaic of mire (M6c) (5%), rush-pasture (MG10) (84%), marshy grassland (MG9) (8%) and grassland along the Midlairgs burn, which flows north through a large area of conifer forestry at the base of the valley. Area slopes gently north-east along the valley towards the burn. The adjacent conifer forestry features modified drainage ditches. A forestry access track is located to the south and east of the area. Area underlain by peaty podzols, low productivity Devensian Till and psammite deposits. Precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.	Highly Sub-dominant	Low	Medium
BH24	MG9/U4a	0.203	Mosaic of marshy grassland (MG9) (95%) and grassland located within an area of felled conifer forestry gently sloping north-west to the Midlairgs burn. Forestry access track located to the east and upslope of the area, parallel to the burn. Aerial imagery shows presence of modified drainage. Area underlain by peaty podzols and low productivity peat and psammite deposits. Precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.	Moderately Dominant	Low	Medium
BH31	M15b/M19a/H12a	0.407	Mosaic of wet heath (M15b) (58%), mire and heath located south and upslope of the existing forestry track. Area slopes moderately north towards the track, with the Midlairgs burn flowing north through the area. Aerial imagery shows rock outcrop is visible within the east of the area. Area	Moderately Dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			underlain by peaty podzols and low productivity psammite deposits. Given the topography and lack of superficial deposit, this area is likely to be fed by hill runoff, precipitation and surface water flow.			
BH32	M15b/M19a /M15c/H12a / H21a	0.452	Mosaic of wet heath (M15b) (10%), mire and heath located south and upslope of the existing forestry track. Area slopes moderately north towards the track, with the Midlairgs burn flowing north 30m west of the area. Aerial imagery shows rock outcrop is visible within the centre of the area. Area underlain by peaty podzols and low productivity psammite deposits. Given the topography and lack of superficial deposit, this area is likely to be fed by hill runoff, precipitation and surface water flow.	Moderately Dominant	Low	Medium
BH30	MG10a/U4a	0.027	Mosaic of rush-pasture (MG10a) and grassland located south and adjacent to the forestry track, with the area sloping gently towards the track. The Midlairgs Burn flows north adjacent to the area. Aerial imagery shows outcrop is visible in the area. Area underlain by peaty podzols and low productivity psammite deposits. Given the topography and lack of superficial deposit, this area is likely to be fed by hill runoff, precipitation and surface water flow.	Moderately Dominant	Low	Medium
BH49	H9-12/M15b	0.105	Mosaic of mire (M15b) (15%) and heath located along a narrow strip within area of conifer plantation, with the A9 located downslope to the south-west. Area slopes moderately south-west. The conifer plantation immediately upslope features modified drainage. Underlain by peat podzols, low productivity Devensian Till and psammite deposits. This area is likely to be fed by a combination of hill runoff, precipitation and groundwater sources.	Moderately Sub-dominant	Low	Medium
BH42	M6c/MG10a /MG9/M15b /H9-12	0.139	Mosaic of mires (M6c) (82%), marshy grassland (MG9) (5%), rush-pasture (MG10a) (8%), wet heath (M15b) (3%) and heath located immediately upslope of the existing A9 road. An unnamed tributary of the Midlairgs burn flows through the area south-west towards the road. Underlain by peat podzols, low productivity Devensian Till and psammite deposits. This area is likely to be fed by a combination of hill runoff, precipitation and groundwater sources.	Highly Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
BH41	M15b/MG9/ MG10a	0.055	Mosaic of mires (M6c) (85%), marshy grassland (MG9) (10%), rush-pasture (MG10a) (5%) and heath located immediately upslope of the existing A9 road. An unnamed tributary of the Midlairgs burn flows immediately north of the area south-west towards the road. Underlain by peat podzols, low productivity Devensian Till and psammite deposits. This area is likely to be fed by a combination of hill runoff, precipitation and groundwater sources.	Moderately Dominant	Low	Medium
BH25	U4a/MG10a /MG9	0.064	Mosaic of marshy grassland (MG9) (4%), rush-pasture (MG10a) (6%) and grassland located along the Midlairgs Burn, immediately north and downslope of a forestry track. The burn flows north through the area. Aerial imagery shows the area features modified drainage ditches. Underlain by peaty podzols, and low productivity peat and psammite deposits. Precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.	Moderately Sub-dominant	Low	Medium
A390	M6c/M17a/ H9-12	0.062	Mosaic of mire (M6c) (70%) and heath located within an area of conifer forestry, immediately south-west and downslope of the existing A9. Area is relatively flat, sitting at the base of a slope. The Midlairgs burn, located 75m south, flowing north-west then west. Adjacent area features conifer forestry. Underlain by peaty podzols, low productivity Devensian Till and semipelite deposits. This area is likely to be fed by a combination of hill runoff, precipitation and groundwater sources.	Highly Dominant	Moderate	High
DB_B085	Je/U4	0.286	Mosaic of Juncus Effusus (55%) and grassland located immediately downslope of an existing access track within the valley of the Allt Creag Bheithin watercourse. Area slopes gently south-east, and is located within the defined SEPA 200 year floodplain. Underlain by peaty podzols, moderate to high productivity alluvium deposits, and low productivity psammite deposits. Given the location adjacent to the watercourse and at the base of the hill, groundwater is likely to be a source as well as precipitation and runoff.	Moderately Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
DB_C059	M17a/M20a /M15b/M2	0.508	Mosaic of mires including wet heath (M15b) (5%) across a large area of peatland between the existing A9 to the south, Highland Mainline Railway to the north-east, and a tributary of the Allt Creag Bheithin to the west. Area slopes gently to the north. Peat depths in the area are up to 0.35m in depth. Underlain by peat and peaty soils, low productivity Devensian Till and psammite deposits. This area is likely to be fed by a combination of precipitation, surface water runoff and groundwater.	Moderately Sub-dominant	Low	Medium
DB_C059	M17a/M20a /M15b/M2	0.032	Mosaic of mires including wet heath (M15b) (5%) across a large area of peatland between the existing A9 to the south, Highland Mainline Railway to the north-east, and a tributary of the Allt Creag Bheithin to the west. Area slopes gently to the north. Underlain by peat and peaty soils, low productivity Devensian Till and psammite deposits. This area is likely to be fed by a combination of precipitation, surface water runoff and groundwater.	Moderately Sub-dominant	Low	Medium
DB_C117	U4b/M6c	0.017	Mosaic of mire (M6c) (20%) and grassland located along the banks of an unnamed tributary of Loch Moy, flowing north-east from the B9154 towards Loch Moy. Underlain by moderate to high productivity Alluvial Fan deposits and low productivity psammite deposits. This area is likely to be fed by a combination of surface water flow, precipitation, surface runoff and groundwater.	Highly Sub-dominant	High	Very High
DB_J132	M19/M20/ M6c	0.061	Mosaic of mires including M6c (5%) located south of Lynebeg, in an area with undulating gentle slopes. The Caochan na h-Eaglais watercourse flows north-east through this area. Area underlain by peaty gleys, low productivity Devensian Till and psammite deposits. Given the topography of the area, this area is likely to be fed by a combination of hill runoff, surface water flow, precipitation and groundwater.	Highly Sub-dominant	High	Very High
DB_J050	M19a/M6c	0.000	Mosaic of mires including M6c (3% of area), located within a small area south-west and upslope of the existing A9. Area slopes moderately north-east, with the nearest watercourse located 200m south-east of the area. Area underlain by peaty gleys, low productivity Devensian Till and psammite deposits.	Highly Sub-dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			This area is likely to be fed by a combination of groundwater, hill runoff and precipitation.			
DB_J040	M16d/U6/M25	0.033	Mosaic of mires including M16d (90%), M25 (5%) and grassland (U6) (5%) located immediately downslope of an estate access track, which slopes gently north-east towards the Highland Mainline Railway. A small unnamed watercourse is located 100m north-east and downslope of this area, flowing east towards the A9 road. Area underlain by peaty podzols, and low productivity Devensian Till and psammite deposits. Area likely to be fed by a combination of hill runoff, precipitation and groundwater sources.	Highly Dominant	Moderate	High
DB_J047	M15b/M19/U5	0.046	Mosaic of mires including M15b (85%) and grassland located immediately downslope of an estate access track, which slopes gently north-east towards the Highland Mainline Railway. A small unnamed watercourse is located 100m east and downslope of this area, flowing east towards the A9 road. Area underlain by peaty podzols, and low productivity Devensian Till and psammite deposits. Area likely to be fed by a combination of hill runoff, precipitation and groundwater sources.	Moderately Dominant	Low	Medium
DB_X030	M6c	0.040	Mire (M6c) area located along a narrow strip along a small watercourse flowing north-east within the wider peatland. Area located north-east and downslope of the B9154 road. Aerial imagery shows the presence of drainage ditches flowing north-east towards the Funtack Burn Underlain by peaty podzols, low productivity peat and psammite deposits. Precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.	Highly Dominant	Low	Medium
DB_X014	U5/Je	0.002	Mosaic of Juncus Effusus (25%) and grassland located within peatland east of the B9154 road and west of the Funtack Burn. Slope angles are relatively flat. A number of drains west of the area flow north into the Funtack Burn. Area underlain by low productivity peat and psammite deposits. Given the depth of peat in this area, this area is likely to be fed primarily by precipitation and surface runoff.	Moderately Sub-dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
DB_X013	U4/Je/U5	0.013	Mosaic of Juncus Effusus (35%) and grassland located within an area of peatland east of the B9154 road. The Funtack Burn is located 125m north-east and downslope of the area. Area is relatively flat, and underlain by peaty podzols, low productivity peat and psammite deposits. This area is likely to be dominantly fed by precipitation and surface water run-off.	Moderately Sub-dominant	Low	Medium
DB_X013	U4/Je/U5	0.044	Mosaic of Juncus Effusus (35%) and grassland located within an area of peatland east of the B9154 road. Located along the northern banks of a field drain, which flows north-east towards the Funtack Burn. Area is relatively flat, and underlain by low productivity peat and psammite deposits. This area is likely to be dominantly fed by precipitation, surface watercourses and surface run-off.	Moderately Sub-dominant	Low	Medium
DB_A147	U4a/Je/U5a /U4b	0.058	Mosaic of grassland and Juncus Effusus (35%) located at the base of the hill slope, with a moderate slope angle, between an existing access track and the banks of the Dalmagarry Burn. Underlain by peaty podzols, moderate to high productivity alluvium deposits and low productivity psammite deposits. Likely to be fed by a combination of hill runoff, precipitation and groundwater sources.	Moderately Sub-dominant	Moderate	High
DB_C184	MG9/MG1/ U4a	0.022	Mosaic of marshy grassland (MG9) (80%) and grassland located along the southern banks of the River Findhorn, located north and downslope of the existing A9. Area slopes gently north, with an area of conifer plantation located immediately upslope. Located within the SEPA 200 year fluvial floodplain. Area underlain by humus-iron podzols, moderate to high productivity alluvium deposits and low productivity granodiorite deposits. This area is likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Moderate	High
DB_B176	MG10a	0.011	Area of rush-pasture (MG10) located 35m north-east of a ditch that flows north-west then north into the River Findhorn. Area is relatively flat and slopes towards the north. Underlain by moderate to high productivity River Terrace deposits and low productivity granodiorite deposits. This area is likely to be fed by a combination of precipitation, surface water runoff and groundwater sources.	Moderately Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
BH15e	M6c/M4/MG10a/M19a/U4a/MG9	0.053	Mosaic of mire (M6c) (80%), rush-pasture (MG10) (3%), marshy grassland (MG9) (1%) and grassland along the Midlairgs burn, which flows west through the area. Area slopes gently to the north. A forestry access track and the existing A9 are both located upslope to the north-east. Area underlain by peaty podzols, low productivity peat and psammite deposits. Precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.	Highly Dominant	Low	Medium
B099e	M6c	0.729	Mire area (M6c) located along the north-western banks of an unnamed tributary of the Allt Creag Bheithin, which gently slopes north-east. Area underlain by peaty podzols, high productivity Glaciofluvial Sheet Deposits and low productivity psammite deposits. This area is likely to be fed by a combination of surface and groundwater sources.	Highly Dominant	High	Very High
JM012	H9-12/MG9/MG10a/M6c	0.417	Mosaic of marshy grassland (MG9) (20%), rush-pasture (MG10a) (15%) and mire (M6c) (5%) located north-east and upslope of the existing A9 road. A small watercourse to the north of the area, flows south-west towards the A9. Area slopes moderately to the west. Area of conifer forestry with modified drainage located immediately upslope. Underlain by peaty podzols, low productivity Devensian Till and semipelite deposits. Given the topography and low productivity deposits, this area is likely to be fed by a combination of surface and groundwater sources.	Highly Sub-dominant	Moderate	High
JM011	M23b/MG9/M6c/H9-12	0.123	Mosaic of rush pasture (M23b) (50%), marshy grassland (MG9) (20%), mire (M6c) (15%) and heath located adjacent to an unnamed tributary of the Midlairgs Burn, with meanders south through this area. An existing forestry track is located to the north east, with the surrounding valley featuring conifer forestry. Area features very gentle slope angles. Underlain by peaty podzols, low productivity peat and psammite deposits. Given the location at the base of the valley, this area is likely to be fed by a combination of precipitation, modified drainage, runoff, and groundwater and from the watercourse.	Highly Dominant	High	Very High
JM001	Je/MG10a/MG9	0.227	Mosaic of Juncus effusus (75%), rush-pasture (MG10a) (15%) and marshy grassland (MG9) (10%) located north and downslope of a forestry track,	Moderately Dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			along the banks of an unnamed tributary of the Allt Creag Bheithin. Area slopes gently north-east, with a steep slope with conifer plantation to the west, and felled area to the west. Aerial imagery shows modified drainage ditches within the area. Underlain by peaty gleys and low productivity peat and psammite deposits. Precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.			
JM013	M25/H9c /M19a	0.435	Mosaic of mires including M25a (50%) and heath along a narrow area immediately downslope and south-east of a large area of conifer plantation. Area slopes gently to the east. Underlain by peaty podzols, low productivity Devensian Till and psammite deposits. Area likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Low	Medium
JM015	U4/M25	0.530	Mosaic of mires (M25a) (50%) and heath along a narrow area immediately downslope and south-east of a large area of conifer plantation, running along the existing access track. Area slopes gently east. Ground Investigation works at trial pit TPTM3285 show the area is underlain by topsoil and gravel, with no groundwater encountered to a depth of 4.5mbgl. Given the GI results, precipitation and surface generated run-off from surrounding slopes and artificial drainage ditches are considered to be the dominant water supply mechanisms.	Moderately Sub-dominant	Not GW dependent	Low
JM021	M19a/H9c/ M25/M23b/ M6c	2.161	Mosaic of mires including M25 (15%), M23b (14%) and M6c (1%) featuring a large open area with conifer forestry. Numerous drainage ditches are present within the adjacent area. Area slopes gently north-east, with the B9154 road located downslope to the north-east, and an existing access track located 130m south-east. The Allt Creag Bheithin meanders south-east of the area. Underlain by peaty podzols, low productivity peat and psammite deposits. Given the low productivity deposits and modified drainage system within the area, this area is likely to be fed by a combination of surface and groundwater sources.	Highly Sub-dominant	Moderate	High
JM029	MG10a	0.058	Area of marshy grassland (MG10a) located along the banks of the Findhorn below the A9 bridge, which slopes moderately to the south-east. A small area of conifer forestry is located north-west immediately upslope. Located within the SEPA 200 year floodplain for the River Findhorn. Underlain by humus-	Moderately Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			iron podzols, moderate to high productivity alluvium deposits and low productivity granodiorite deposits. Given its location at the base of the valley adjacent to the Findhorn, this area is likely to be fed by a combination of surface water and groundwater sources.			
JM030	MG10a	0.035	Small area of marshy grassland (MG10a) located downslope of a local access track, immediately upslope of the banks of the River Findhorn at the base of the valley. Underlain by humus-iron podzols, moderate to high productivity River Terrace deposits and low productivity granodiorite deposits. Given its location at the base of the valley adjacent to the Findhorn, this area is likely to be fed by a combination of surface water and groundwater sources.	Moderately Dominant	Moderate	High
JM060	U4/H9/MG9	0.252	Mosaic of marshy grassland (MG9) (10%), heath and grassland located south and upslope of Drumbain Cottage, south of Tomatin. Area slopes moderately north-west, with an access track immediately to the east. The Allt Cosach watercourse is located 150m east of the area, flowing north-west towards the River Findhorn. The area is underlain by humus-iron podzols, low productivity Devensian Till and psammite deposits. Given its topographical location on the hillslope and low productivity deposits, it is likely to be fed by a combination of surface and groundwater sources.	Moderately Sub-dominant	Low	Medium
JM060	U4/H9/MG9	3.334	Mosaic of marshy grassland (MG9) (10%), heath and grassland located east of Drumbain Cottage, with the existing C-road located to the north-east. The area is located within the SEPA 200 year floodplain of the Allt Cosach watercourse, which flows north-west through the area towards the Findhorn. The area is underlain by low productivity Devensian Till and psammite deposits. Given its topographical location on the hillslope and low productivity deposits, it is likely to be fed by a combination of surface and groundwater sources.	Moderately Sub-dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
JM059	U4b/H9/MG9	0.387	Mosaic of marshy grassland (MG9) (10%), heath and grassland located east of Drumbain Cottage, with the existing C-road located immediately to the north-east. The area is located along the banks of the Allt Cosach watercourse within the SEPA 200 year floodplain, which flows north-west through the area towards the Findhorn. The area is underlain by low productivity Devensian Till and psammite deposits. Given its location along the and low productivity deposits, it is likely to be fed primarily by surface water flow, precipitation and hill runoff.	Moderately Sub-dominant	Low	Medium
JJ017	U5/MG10a/OV25	0.216	Mosaic of rush-pasture (MG10a) (13%), grassland and open habitats located north of Dalmagarry Farm. The area is relatively flat, located west of the Funtack Burn and located within the SEPA 200 year floodplain. It sits within a topographic low point within the area. Underlain by high productivity Glaciofluvial Ice Contact deposits and low productivity psammite deposits. Given its location within the floodplain and topographical setting, it is likely to be fed by a combination of precipitation, hill runoff and groundwater sources.	Moderately Sub-dominant	Moderate	High
JM025	U4b/MG10a/MG9	0.339	Mosaic of rush-pasture (MG10a) (10%) and marshy grassland (MG9) (5%) located east and downslope of the B9154 road north-west of Moy. A small drain is located 50m north of the area, flowing north-east into the Moy Burn. Area slopes gently to the east. Underlain by peaty podzols and low productivity peat and granite deposits. This area is likely to be fed by a combination of surface and groundwater sources.	Moderately Sub-dominant	Low	Medium
JM024	MG10a	0.999	Mosaic of rush-pasture (MG10a) (10%) and marshy grassland (MG9) (5%) located east and downslope of the B9154 road north-west of Moy. A small drain is located 35m north of the area, flowing north-east into the Moy Burn. Area slopes gently to the east. Underlain by peaty podzols and low productivity peat and granite deposits. This area is likely to be fed by a combination of surface and groundwater sources.	Moderately Dominant	Low	Medium
JM027	M20/M6c/U4	0.292	Mosaic of mire (M6c) (30%) and grassland located in a relatively flat area between the B9154 road in Moy to the south-west and the Highland Mainline Railway to the east. A small drain follows the road approx. 90m south-east of this area on the opposite side of the railway. Aerial imagery shows a number	Highly Sub-dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			of small drains within the area. Underlain by peaty podzols, low productivity peat and granite deposits. Due to the topography, this area is likely to be fed by a combination of surface and groundwater sources.			
CC017	M19a/M6c	0.018	Mosaic of mires including M6c (15%) located along the banks of the Midlairgs Burn, within an area of conifer plantation. The existing forestry road is located 100m north-east of the area. Area slopes gently to the north, and is underlain by peaty podzols, low productivity Devensian Till and psammite deposits. Given its location near or adjacent to the watercourse, this area is likely to be fed primarily by the watercourse, as well as precipitation and hill runoff.	Highly Sub-dominant	Moderate	High
CC014	M15b/H12a	0.254	Mosaic of wet heath (M15b) (17%) and heath located along an area south of the existing forestry access track, sloping moderately north. An unnamed tributary of the Midlairgs Burn flows north adjacent to the area. Aerial imagery shows exposed bedrock in the area, underlain by peaty podzol soils and low productivity psammite deposits. Given the topography and lack of superficial deposits, this area is likely to be fed primarily by hill runoff and precipitation.	Moderately Dominant	Moderate	High
CC013	H9-H12/M23b	0.120	Mosaic of mire (M23b) (20%) and heath located along the slopes of a small hill sloping south-west above an existing forestry track. An unnamed tributary of the Allt Creag Bheithin is located east of the area at the base of the hill, flowing north-east. Underlain by peaty podzols, low productivity hummocky (moundy) and psammite deposits. Given the relatively steep slopes and low productivity deposits, this area is likely to be fed primarily by precipitation and hill runoff.	Highly Sub-dominant	Low	Medium
CC009	H9-H12/M23b	0.259	Mosaic of mire (M23b) (20%) and heath located along the slopes of a small hill sloping north-west above an existing forestry track. An unnamed tributary of the Allt Creag Bheithin is located west of the area at the base of the hill, flowing north-east. Underlain by peaty podzols, low productivity hummocky (moundy) and psammite deposits. Given the relatively steep slopes and low productivity deposits, this area is likely to be fed primarily by precipitation and hill runoff.	Highly Sub-dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
CC002	H9-H12/M23b	0.311	Mosaic of mire (M23b) (20%) and heath located along the slopes of a small hill sloping north above an existing forestry track. An unnamed tributary of the Allt Creag Bheithin is located west of the area at the base of the hill, flowing north-east. Peat probing results located immediately north along the track show peat and soil depths of up to 1.04m deep. Underlain by peaty podzols, low productivity hummocky (moundy) and psammite deposits. Given the relatively steep slopes and low productivity deposits, this area is likely to be fed primarily by precipitation and hill runoff.	Highly Sub-dominant	Low	Medium
CC004	M6c/M19a	0.194	Mosaic of mires including M6c (80%) along the banks of the Caochan na h'Earbaige, which flows east parallel to the existing forestry road. The area is surrounded by conifer forestry to the north and south, with aerial imagery showing the presence of artificial drainage. Underlain by peaty podzols, low productivity hummocky (moundy) and psammite deposits. Given the relatively steep slopes and low productivity deposits, this area is likely to be fed primarily by precipitation and hill runoff.	Highly Dominant	Low	Medium
CC038	M20/U5a/M6c/M2	0.627	Mosaic of mires including M6c (15%) located within a relatively flat area between the existing B9154 west of Moy and an estate access track. Site walkovers report the area to be wet underfoot, with aerial imagery showing a number of drains in the area, flowing north-east towards the road. Peat probing results within the area show a maximum soil depth of 0.9m. Underlain by high productivity Glaciofluvial Sheet Deposits and low productivity granitic rock. Given the presence of a high productivity superficial deposit and its topographical location, the area is likely to be fed by a combination of surface and groundwater sources.	Highly Sub-dominant	High	Very High
CC037	M23b/U5a	1.650	Mosaic of mire (M23b) (80%) and grassland located downslope of an existing access track west of Moy. The area is located at the base of a gentle hill with shallow slopes towards the south-west, sloping south-west The Allt Creag Bheithin is located 85m south and downslope of the area. Aerial imagery shows a number of small drains within the area, flowing north-east towards the B-road. Area underlain by moderate to high productivity alluvium deposits, and lower productivity psammite deposits. Given the topographic location at the base of the hill, and the presence of	Highly Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			drains within the area, this area is likely to be fed by a combination of surface and groundwater sources.			
CC034	M23b/M6/MG9/U4b	3.271	Mosaic of mires including M23b (60%), M6c (20%), marshy grassland (MG9) (10%) and grassland within a relatively flat area within the floodplain of the Allt Creag Bheithin. An existing access track is located to the north-west, and the B9154 to the north-east. The Allt Creag Bheithin is located to the south, flowing east towards the Highland Mainline Railway. Underlain by peaty podzols, moderate to high productivity alluvium deposits and low productivity psammite deposits. Given the topographic location at the base of the hill, and the presence of drains within the area, this area is likely to be fed by a combination of surface and groundwater sources.	Highly Dominant	Moderate	High
CC031	M6c	0.126	Area of mire (M6c) located in an area very gently sloping to the east, 30m south-west and upslope of the Allt Creag Bheithin. An access track is located 110m north-west of the area. Aerial imagery indicates the area may be waterlogged. Underlain by peaty podzols, moderate to high productivity alluvium deposits and low productivity psammite deposits. Given the topographic location at the base of the hill, and the presence of drains within the area, this area is likely to be fed by a combination of surface and groundwater sources.	Highly Dominant	Moderate	High
CC033	U5a/M25a	0.120	Mosaic of mire (M25a) (10%) and grassland located 10m south-west and upslope of the Allt Creag Bheithin, west of Moy and at the valley bottom. Aerial imagery shows the presence of small drains which eventually flow into the watercourse. Underlain by moderate to high productivity alluvium deposits and low productivity psammite deposits. Given the topographic location at the base of the hill, and the presence of drains within the area, this area is likely to be fed by a combination of surface and groundwater sources.	Moderately Sub-dominant	Low	Medium
CC032	M17/M25a/U5a	0.647	Mosaic of mires including M25a (20%) and grassland located 10m south and upslope of the Allt Creag Bheithin, west of Moy and at the valley bottom. Area slopes very gently north-east towards the watercourse. Underlain by peaty podzols, moderate to high productivity alluvium deposits and low productivity	Moderately Sub-dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			psammite deposits. Given the topographic location at the base of the hill, and the presence of drains within the area, this area is likely to be fed by a combination of surface and groundwater sources.			
CC080	M6c/M23b/ CF	0.236	Mosaic of mires including M6c (50%), M23b (20%) and conifer plantation immediately north-east of the existing C-road south of Tomatin. The Allt Cosach is located immediately downslope to the north-east, with the southern part of the area located within the SEPA 200 year floodplain. The area gently slopes north-east. Ground Investigation works at trial pit TPTM3300 15m south-west shows the area is underlain by sand and clay deposits, with no groundwater encountered to a depth of 4.5mbgl. Given the lack of groundwater encountered during GI, this area is likely to be fed primarily by precipitation and hill runoff.	Highly Dominant	Not GW dependent	Low
CC086	M23b/M6c	0.326	Mosaic of mires including M23b (80%) and M6c (20%) located along the banks of the Allt Cosach watercourse, located at the bottom of the valley with the existing C-road to the south-west and Highland Mainline Railway to the north-east. Underlain by peaty podzols, moderate to high productivity Alluvium deposits and low productivity psammite deposits. Given its location along the banks of the Allt Cosach, this area is likely to be fed by surface water flow and precipitation more than groundwater sources.	Highly Dominant	Moderate	High
CC081	MG9/M23b /M6c/CF	0.277	Mosaic of mires including M23b (20%) and M6c (10%), marshy grassland (MG9) (60%) and conifer forestry located along the western bank of the Allt Cosach watercourse, located at the bottom of the valley with the existing C-road upslope to the south-west and Highland Mainline Railway to the north-east. Underlain by a combination of peaty podzols and humus-iron podzols, moderate to high productivity Alluvium deposits and low productivity psammite deposits. Given its location along the banks of the Allt Cosach, this area is likely to be fed by surface water flow and precipitation more than groundwater sources.	Highly Sub-dominant	Moderate	High
CC010	M23b	0.038	Area of rush-pasture (M23b) located immediately upslope of an existing forest access track, with an area of felled conifer forestry upslope to the south. An unnamed tributary of the Allt Creag Bheithin is located 20m west, flowing north. Underlain by peaty gleys, low productivity peat and psammite deposits.	Highly Dominant	Moderate	High

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
			This area is likely to be fed by a combination of surface water and groundwater sources.			
JM004	MG9/H9-12/Je/H9	0.442	Mosaic of rush-pasture (MG9) (60%), Juncus Effusus (15%) and heath located along the banks of the unnamed tributary of the Allt Creag Bheithin, flowing north-east through an area of felled conifer forestry. The surrounding slopes are gentle and feature artificial drainage. Underlain by peaty podzols, low productivity peat and psammite deposits. This area is likely to be fed primarily by surface water flow and surface drains, with groundwater dependency low.	Moderately Dominant	Low	Medium
CC030	MG10a/M25b/U4a	0.529	Mosaic of rush pasture (MG10, 80%), mire (M25b, 10%) and grassland located on gentle slopes within the 200 year floodplain of and immediately adjacent to the Allt Creag Bheithin. Underlain by peaty podzols and moderate to high GW productivity alluvium. Habitat lies within localised flat spot adjacent to the watercourse, with steeper slopes draining to this area, therefore likely to be collecting surface water runoff. Given the topographic setting, it is considered likely that the habitat is supported by surface water runoff and high flows from the watercourse, with groundwater dependency likely to be low.	Moderately Dominant	Low	Medium
CC043	M20/MG10a/U5a	0.156	Mosaic of mire, rush pasture (MG10, 20%) and grassland located on gently sloping ground on the fringes of improved agricultural land. Located between the B9154 and the HML. No peat probing has been undertaken in this area, however aerial imagery suggests this habitat lies at the transition between deeper peat and improved agricultural grassland, with pockets of deeper peat likely. This is supported by the superficial geology, which indicates the boundary between glaciofluvial sands and gravels and peat deposits. No GI in the vicinity. Historically surface water runoff towards the Moy Burn has been impeded by the HML, resulting in waterlogged ground conditions in this broad area. It is likely that the waterlogged nature of the dominant mire vegetation is supporting the rush pasture, rather than groundwater.	Moderately Sub-dominant	Low	Medium

Polygon ID	NVC Community	Area (ha)	Baseline Description - hydrological, hydrogeological, topographical and ecological description.	SEPA GWDTE dependency	Revised GW Dependency	Sensitivity
J177	U4/M23b/CP/M6c	0.616	Mosaic of grassland, rush-pasture (M23b, 30%) (M6c, 3%) and conifer plantation located in gently to steeply sloping drumlin terrain adjacent to the Midlairgs Burn and an existing forestry track. Underlain by peat >1m in the gently sloping areas, hummocky (moundy) glacial deposits which are not considered a significant aquifer, and low productivity psammite. There are two trial pits located within 35m of this habitat, one was found to be dry to total depth at 2.3m, while the other struck water at 2mbgl. Given the topographic setting and poorly draining ground conditions it is considered likely that this area is dominated by surface water flows and collection, with groundwater dependence considered low	Highly Sub-dominant	Low	Medium
J177	U4/M23b/CP/M6c	0.052	Mosaic of grassland, rush-pasture (M23b, 30%) (M6c, 3%) and conifer plantation located in gently sloping drumlin valley terrain adjacent to the Midlairgs Burn and an existing forestry track. Underlain by peat >1m, hummocky (moundy) glacial deposits which are not considered a significant aquifer, and low productivity psammite. A trial pit located within 15m of this habitat was found to be dry to a total depth of 2.3m. Given the topographic setting and poorly draining ground conditions it is considered likely that this area is dominated by surface water flows and collection, with groundwater dependence considered to be low.	Highly Sub-dominant	Low	Medium

Table A6.3: Revised Groundwater Dependency within 250m Study Area

Revised Groundwater Dependency	Sensitivity	Area (ha)	No of polygons
High	Very High	13.1	25
Moderate	High	54.2	132
Low	Medium	58.8	128
Not Groundwater Dependent	Low	15.3	26
Total		141.4	311

6.1.6. From an original list of 452 potential GWDTE areas, the results show that approximately 37% of the communities are no longer considered to be groundwater dependent or hydrologically linked to the scheme following screening and desktop studies. 63% of the NVC habitats initially identified using the SEPA criteria are still considered as GWDTEs with potential High, Moderate or Low groundwater dependence.

6.1.7. For the purpose of the individual GWDTE area assessment, NVC communities which are defined as highly dependent are considered to be genuinely groundwater dependent and are considered to be of Very High sensitivity. Areas with potential moderate groundwater dependency are likely to receive water from a combination of surface water, rainfall and groundwater sources, and are considered to be of High sensitivity. Low groundwater dependency areas are likely to be predominantly fed by surface runoff and direct rainfall, but groundwater may contribute, deemed to be of Medium Sensitivity.

6.1.8. The limited coverage of monitoring wells across the scheme does not provide enough information to determine whether these areas are solely groundwater fed at the present time. It is proposed that further groundwater monitoring is carried out at a representative sample of these areas during the detailed design phase to determine whether they are true GWDTEs; this has been included as a mitigation commitment in Section 10.5 of Chapter 10 Geology Soils and Groundwater. This uncertainty has led to a precautionary approach when defining groundwater dependency status for individual areas.

6.1.9. Areas assessed as having no groundwater dependency, while assessed as having a Low sensitivity, have not been progressed to the impact assessment.

6.2. Impact Assessment

Introduction

6.2.1. GWDTEs within the study area may be impacted through direct loss of habitat under the footprint of the Proposed Scheme, as a result of land required for the Proposed Scheme and for land required for any temporary works, such as construction haul routes, temporary storage areas for materials etc.

6.2.2. In addition to the impacts quantified above, GWDTEs located adjacent to the new infrastructure may be indirectly impacted through severance of habitat and through changes to the groundwater regime supporting the habitat. This could result in altered vegetation in corridors close to infrastructure. This may be caused by:

- soil compaction within the working area;
- unlined filter drains, which are proposed along much of the mainline carriageway – depending on the groundwater table these may intercept shallow groundwater flow,

or may discharge a small proportion of road runoff to groundwater. This could affect downhill GWDTEs either adversely or beneficially;

- loss of groundwater infiltration due to the increased impermeable road surface; and
- interruption of groundwater flow due to less permeable embankment material – free-draining granular material is proposed for the embankments to allow water to pass below and perpendicular to the carriageway. For GWDTEs down gradient of embankments it is unlikely that subsurface flows would be impacted.

6.2.3. It should be noted that as part of the design process, the potential loss of GWDTEs has been reduced through embedded design mitigation measures such as the introduction of a compact grade separated junction at Tomatin GSJ, and the optimisation of proposed access tracks for SuDs ponds.

6.2.4. Table A6.4 below summarises the direct loss of GWDTEs under the footprint of the scheme, the indirect loss of GWDTEs as a result of drawdown from cuttings, and indirect loss of GWDTEs as a result of changes to subsurface flows. It also includes potential mitigation measures proposed in Section 6.3, with the residual magnitude and significance ratings for each habitat.

Table A6.4: Impact Assessment of the Proposed Scheme on GWDTEs

Polygon ID	Area (ha)	Sensitivity	Direct loss under Proposed Scheme (ha)	Indirect loss from Cutting (ha)	Cutting No	Description of Impact	Potential Magnitude	Potential Significance	Proposed Mitigation	Residual Effect Magnitude	Residual Effect Significance
Z067-	0.012	Medium	0	0		Habitat located 10m west and parallel to the proposed road upgrade at Tomatin South Junction. Due to the minimal construction work proposed upslope, no significant changes to hydrological flow are anticipated.	Negligible	Neutral	None	Negligible	Neutral
A326	0.228	Very High	0.2156	0		Habitat located almost entirely under the Proposed Scheme footprint, comprising of new embankments, associated drainage ditches and a stream realignment.	Major	Very Large	None	Major	Very Large
JM028	0.244	Very High	0	0		This habitat lies 25m east and downslope of the B9154 road, where minor works are being carried out to upgrade the existing road, with small embankments located upslope of this area. Given the presence of the existing road, no measureable changes to groundwater flow are anticipated.	Negligible	Neutral	None	Negligible	Neutral
A029-	1.073	High	0.5354	0		This area is located immediately south of the upgrades at Tomatin South Junction, which includes both cutting and embankments. There will be a direct loss of this habitat under the Proposed Scheme. There is unlikely to be any changes to flow downslope given the limited extent of earthworks in the area.	Moderate	Large	None	Moderate	Large
A038-	0.003	Medium	0	0		Habitat located 30m south-west and downslope of the nearest cutting at Tomatin South Junction. No direct loss is anticipated, with no measurable change in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
W002-	1.337	High	0	0		This habitat is located 60m north-east and upslope of the proposed upgrades at Tomatin South Junction. There is no impact predicted to groundwater changes in this area.	Negligible	Neutral	None	Negligible	Neutral
W004-	0.108	High	0	0		This habitat is located 70m north-east upslope of the proposed upgrades at Tomatin South Junction. There is no impact predicted to groundwater changes in this area.	Negligible	Neutral	None	Negligible	Neutral
W005-	0.194	High	0	0		This habitat is located 110m north and upslope of the proposed upgrades at Tomatin South Junction. There is no impact predicted to groundwater changes in this area.	Negligible	Neutral	None	Negligible	Neutral
W015-	0.116	High	0	0		This habitat is located 190m south-east and upslope of the Proposed Scheme at Tomatin South Junction. Due to its location upslope of the scheme, no impact is proposed on this area.	Negligible	Neutral	None	Negligible	Neutral
A388	0.092	Medium	0.0116	0		This habitat is located perpendicular to the upgrade of the forestry track. A small proportion of the area is within the footprint of the Proposed Scheme (drainage ditches) with the remainder located upslope. A proportion of this habitat will be lost, with no upslope impacts anticipated.	Minor	Slight	None	Minor	Slight
A371	0.078	Medium	0.0455	0		Habitat located adjacent to and within footprint of Proposed Scheme along the existing forestry track. This area will be partially lost under the footprint, with no upslope impacts predicted.	Moderate	Moderate	None	Moderate	Moderate
A382	0.337	Medium	0	0		Habitat located 90m north-east and downslope of the upgrade of the forestry access track. The track features drainage ditches which discharge runoff from the access track 80m upslope of the habitat, with a small increase in impermeable area. As a result, any groundwater flow is unlikely to change with no impact anticipated.	Negligible	Neutral	None	Negligible	Neutral
A381	0.367	Very High	0.2055	0		Habitat located within and adjacent to the junction of the upgraded forestry track, featuring a small embankment. The track drained by ditches and/or grassed channels/swales, which have the potential to cut	Moderate	Large	Use of permeable fill in embankment to maintain flow. Included in baseline pre-construction monitoring to	Moderate	Large

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						off overland surface flow to the habitat. Some loss of habitat will occur both under the footprint and downslope.			determine groundwater dependency.		
A373	1.502	Medium	0	0		Habitat located 50m south-west and downslope of the works associated with the mainline carriageway, located diagonally in relation to the road. A small increase in footprint including a small cutting, is required along the northbound carriageway (which does not intercept groundwater). No measurable impact is anticipated to this area.	Negligible	Neutral	None	Negligible	Neutral
A366	0.253	Medium	0	0		Habitat located 65m north and downslope of the forestry access track, with limited earthworks required, therefore no measureable impact is anticipated.	Negligible	Neutral	None	Negligible	Neutral
A345	0.021	Medium	0	0		This habitat is located 110m south-east and upslope of a new SuDs access track within a felled area of conifer plantation. The Proposed Scheme features new drainage ditches flowing north to the Allt Creag Bheithin. No impact is anticipated to this area.	Negligible	Neutral	None	Negligible	Neutral
A323	3.194	Medium	0.564	0		Habitat located along the Allt Creag Bheithin watercourse, directly underneath a new SuDs access track, as well parallel and downslope to the widened mainline carriageway footprint including embankments, ditches, flood compensation areas, three stream realignments and road verges. Impacts to changes downslope are likely to be limited due to watercourse flow being maintained, with a reduction in surface runoff likely in sections.	Moderate	Moderate	Use of permeable fill in embankment to maintain flow. Included in baseline pre-construction monitoring to determine groundwater dependency.	Moderate	Moderate
A319	0.209	Medium	0.0367	0		Habitat located perpendicular to the Proposed Scheme, located downslope of the dualled mainline carriageway. Some loss of habitat directly under the proposed ditch, embankment and verge, with changes to flow downslope limited.	Moderate	Moderate	Use of permeable fill in embankment to maintain flow. Included in baseline pre-construction monitoring to determine groundwater dependency.	Moderate	Moderate
A332	0.125	High	0.1248	0		Habitat located entirely within the scheme footprint where the mainline carriageway is being widened. Complete loss of this habitat.	Major	Large	None	Major	Large
A328	0.035	High	0.0351	0		Habitat located entirely under Proposed Scheme footprint, where mainline carriageway is being widened, and new embankments and ditches are proposed. Complete loss of this habitat under the footprint of the scheme	Major	Large	None	Major	Large
A330	0.122	High	0.122	0		Habitat located almost entirely under the Proposed Scheme footprint, comprising of new embankments, associated drainage ditches and access track, with a small proportion located parallel and upslope to the scheme.	Major	Large	None	Major	Large
A327	0.078	High	0.0782	0		Habitat located entirely within the Proposed Scheme footprint, under new embankments, drainage ditches and verge associated with mainline widening.	Major	Large	None	Major	Large
A331	0.171	Very High	0.1706	0		Habitat located entirely within the Proposed Scheme footprint, under new embankments, drainage ditches and verge associated with mainline widening.	Major	Very Large	None	Major	Very Large
A154	0.135	High	0.0274	0		Habitat located partially within the footprint of a small turning area off the existing track, with the remainder of the area located downslope. Some of the area will be directly lost, with the remainder impacted by new track upslope which may change subsurface flows.	Moderate	Moderate	None	Moderate	Moderate
A393	0.106	High	0	0		Habitat located 40m south and upslope of the Proposed Scheme, where the proposed realignment of the Allt na Slanaich is located. No measureable impacts are predicted.	Negligible	Neutral	None	Negligible	Neutral

Polygon ID	Area (ha)	Sensitivity	Direct loss under Proposed Scheme (ha)	Indirect loss from Cutting (ha)	Cutting No	Description of Impact	Potential Magnitude	Potential Significance	Proposed Mitigation	Residual Effect Magnitude	Residual Effect Significance
A394	1.075	High	1.074	0		Habitat located entirely within the Proposed Scheme footprint, under new embankments, cuttings, drainage ditches and verge associated with mainline widening.	Major	Large	None	Major	Large
A291	0.026	High	0	0		Habitat located 80m south-east and upslope of the Proposed Scheme, where the proposed realignment of the Allt na Slanaich is located. No measureable impacts are predicted.	Negligible	Neutral	None	Negligible	Neutral
A248	0.177	High	0.0969	0	69	Habitat located perpendicular and upslope to the mainline carriageway widening, with half of the area lost under the scheme verge and stream realignment. This area will not be impacted by drawdown from cuttings due to direct loss within the same area. The remainder of the area is located upslope, with limited impact anticipated.	Major	Very Large	None	Major	Very Large
A250	0.721	Medium	0.3263	0.090	69	Habitat located within the mainline widening, cutting and drainage ditches of the Proposed Scheme, with the remainder of the area located perpendicular and upslope of the area. Approximately a third of this area will be directly lost, with a small area upslope potentially impacted by changes to groundwater levels.	Moderate	Moderate	None	Moderate	Moderate
A252	0.034	Medium	0.0297	0.004	69	Habitat located within the mainline widening, cutting and drainage ditches of the Proposed Scheme, with the remainder of the area located perpendicular and upslope of the area. Nearly all of this area will be directly lost, with a small area upslope potentially impacted by changes to groundwater levels.	Major	Large	None	Major	Large
A259	0.198	High	0	0		Habitat located 80m south, parallel and upslope of the Proposed Scheme where mainline widening, and associated cuttings and drainage ditches are proposed. No impact to this area is anticipated.	Negligible	Neutral	None	Negligible	Neutral
A258	0.406	High	0	0		Habitat located 120m south-east, parallel and upslope of the Proposed Scheme where mainline widening, and associated cuttings and drainage ditches are proposed. No impact to this habitat is anticipated.	Negligible	Neutral	None	Negligible	Neutral
A204	0.218	High	0	0		Habitat located 70m south-west, parallel and upslope of cuttings associated with mainline widening, and 100m west of a proposed SuDs access track adjacent to the Allt na Lonine Moire. No impact to this habitat is anticipated.	Negligible	Neutral	None	Negligible	Neutral
A203	2.537	Medium	0	0		Habitat located 120m south-west and parallel to the cuttings associated with mainline widening, with a new SuDs access track located 125m east and downslope of the area. No impact to this habitat is anticipated.	Negligible	Neutral	None	Negligible	Neutral
A161	0.178	Medium	0	0		Habitat located 75m south-west and upslope of the upgraded track at Lynemore, located perpendicular to the Proposed Scheme and adjacent to the existing road. No impact to this habitat is anticipated.	Negligible	Neutral	None	Negligible	Neutral
A277	0.069	High	0.0425	0		Habitat located within the footprint of the new SuDs access track and attenuation pond, with a portion of the area located between the access track upslope and downslope. The track will be drained by ditches and/or grassed channels/swales, which have the potential to cut off overland surface flow to the habitat. This area is likely to be impacted by direct loss as well as changes to sub-surface flow.	Major	Large	Use of permeable fill in embankment to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Major	Large
A263	0.349	Medium	0.0269	0		Habitat located within the footprint of a new SuDs access track south of the existing A9, featuring new impermeable areas, small embankments and drainage ditches. A small area will be directly lost, with no upslope impacts anticipated.	Minor	Slight	None	Minor	Slight
A149	0.745	High	0.1371	0		Habitat located partially under the footprint of existing scheme and new estate access tracks south of the Dalmagarry Burn, including new	Moderate	Moderate	None	Moderate	Moderate

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						cuttings and drainage ditches parallel to the hillslope. A proportion of the area will be directly lost, with changes to subsurface flows unlikely where the access track is already present upslope.					
A152	0.063	High	0	0		Habitat located 15m north and downslope of the proposed upgrade of an existing estate access track, located diagonally to the track. Changes to subsurface flows are likely to be minimal, with no impact anticipated.	Negligible	Neutral	None	Negligible	Neutral
A151	0.081	High	0	0		Habitat located 75m north-west and downslope of existing access track, which requires minor upgrades. Unlikely to be impacted by changes to subsurface flows as the track location has not changed.	Negligible	Neutral	None	Negligible	Neutral
A150	0.282	High	0.0465	0		Habitat located within proposed embankment, drainage ditch, temporary construction ponds and temporary construction area, with remaining area located downslope of existing track upgrades. No indirect impact anticipated.	Moderate	Moderate	None	Moderate	Moderate
A147	0.100	High	0.0788	0		Habitat located predominantly under the Proposed Scheme Footprint featuring proposed drainage ditches and areas for temporary works, with a small area located outside of the footprint downslope of the scheme. Direct loss of habitat is anticipated, with no indirect impacts anticipated.	Moderate	Moderate	None	Moderate	Moderate
A147	0.154	High	0.0788	0		Habitat located under new embankments, drainage ditch and Proposed Scheme footprint, with the remainder located downslope and parallel to the existing estate access track. The impact on this habitat includes a small proportion of direct loss, with no changes to subsurface flows upslope predicted.	Moderate	Moderate	None	Moderate	Moderate
A145	0.166	High	0.0318	0		Habitat located within the Proposed Scheme footprint, featuring proposed drainage ditches along the upgraded estate access track, with the remainder located parallel and upslope of the scheme. Some direct loss is anticipated, with no indirect impacts to subsurface flows.	Moderate	Moderate	None	Moderate	Moderate
A156	1.608	Very High	0.1637	0		Habitat located within footprint of Proposed Scheme, including an upgraded access track and associated drainage where the habitat will be lost. The remainder of the area is located upslope of the track, with no impact anticipated.	Minor	Moderate	None	Minor	Moderate
A138	1.378	High	0	0		Habitat located 12m south and upslope of the upgrade to the estate access track. No impact is anticipated to this area.	Negligible	Neutral	None	Negligible	Neutral
A102	0.169	High	0.1527	0		Habitat almost entirely under the Proposed Scheme footprint, featuring new cuttings, drainage ditches and cycle path, resulting in a direct loss. A small portion of the area, located parallel and immediately upslope, is unlikely to be impacted by any indirect loss.	Major	Large	None	Major	Large
A405	0.051	Medium	0.0507	0	43	Habitat located under the footprint of the Proposed Scheme, where the mainline carriageway is being widened. Complete loss of habitat.	Major	Large	None	Major	Large
A107	0.263	High	0.2627	0		Habitat located under the footprint of the Proposed Scheme, where the mainline carriageway is being widened. Complete loss of habitat.	Major	Large	None	Major	Large
A397	0.041	High	0.0336	0		Habitat located west and immediately upslope of proposed drainage ditches associated with the new cycle track alignment, with a small area of direct loss associated with the scheme footprint.	Moderate	Moderate	None	Moderate	Moderate
A410	0.074	High	0.0743	0		Habitat located under the footprint of the Proposed Scheme, where the mainline carriageway is being widened. Complete loss of habitat.	Major	Large	None	Major	Large
A406	0.025	Medium	0.0250	0		Habitat located under the footprint of the Proposed Scheme, where the mainline carriageway is being widened. Complete loss of habitat.	Major	Large	None	Major	Large

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A404	0.102	High	0.1021	0		Habitat located under the footprint of the Proposed Scheme, with proposed drainage ditches where the mainline carriageway is being widened. Complete loss of habitat.	Major	Large	None	Major	Large
A108	0.251	Medium	0.2505	0		Habitat located under the footprint of the Proposed Scheme, with proposed drainage ditches where the mainline carriageway is being widened. Complete loss of habitat.	Major	Large	None	Major	Large
A077	0.040	High	0.0094	0		Habitat located partially under the scheme footprint, where drainage ditches are proposed for the mainline carriageway widening, with some direct loss anticipated. The remainder of the area lies parallel and upslope, with no impact anticipated.	Moderate	Moderate	None	Moderate	Moderate
A087	0.009	Medium	0.0085	0		Habitat located entirely within a cutting associated with widening of the mainline widening. Complete loss of habitat.	Major	Large	None	Major	Large
A082	0.044	Very High	0.035	0		Habitat located partially within the Proposed Scheme, with the nearest infrastructure comprising of a new stream realignment and outfall downgradient. Some direct loss is anticipated where habitat is located within area identified for temporary works.	Major	Very Large	None	Major	Very Large
A021	1.665	Medium	0.0015	0		Habitat partially located within footprint of Proposed Scheme, primarily in areas for temporary construction and landscaping, resulting in a small amount of direct loss. The remainder of the habitat is located upslope and is unaffected by changes to flow.	Minor	Slight	None	Minor	Slight
A015	0.020	Medium	0	0		Habitat located 130m west and upslope of the Proposed Scheme, where a new cutting is proposed. No impacts are predicted to this habitat.	Negligible	Neutral	None	Negligible	Neutral
A026	0.055	Medium	0	0		Habitat located 40m south-west and downslope of the Proposed Scheme, where the mainline carriageway is being upgraded. As the road is already dualled at this location, with construction works featuring relatively small cuttings, impacts downslope are likely to be minimal.	Negligible	Neutral	None	Negligible	Neutral
A029	0.196	High	0.016	0		Habitat located 70m south-west and downslope of the Proposed Scheme, where the mainline carriageway is being upgraded. As the road is already dualled at this location, with construction works featuring relatively small cuttings, impacts downslope are likely to be minimal.	Negligible	Neutral	None	Negligible	Neutral
A073	0.016	High	0.0010	0		Habitat located partially within the Proposed Scheme Footprint, immediately downslope of the C-road upgrades which are limited in area. As a result, there is a small area of direct loss with no real changes to subsurface flows downslope.	Minor	Slight	None	Minor	Slight
A066	0.309	Medium	0.0871	0	007	Habitat located along the Allt na Frithe, with a small area located within the Proposed Scheme footprint. Approximately half of the area is located within the zone of influence of cuttings, where groundwater changes may impact GWDTEs. The western area of the habitat is located upslope and will not be impacted.	Moderate	Moderate	For indirect impacts associated with cuttings, to be included in baseline pre-construction monitoring to determine groundwater dependency.	Moderate	Moderate
A070	0.238	High	0.2248	0	007	Habitat located almost entirely under the footprint of the Proposed Scheme, including new road carriageway and associated drainage ditches. A small part of the area is located immediately upslope, with no impacts predicted.	Major	Large	None	Major	Large
A051	0.014	High	0.0140	0		Habitat located entirely under proposed cuttings at the Tomatin North Junction, complete loss of habitat.	Major	Large	None	Major	Large
A048	0.049	Medium	0.0118	0		Habitat located partially under the Proposed Scheme footprint, immediately adjacent to new cuttings at the Tomatin North Junction with direct loss of habitat. The area immediately downslope may be impacted from changes to subsurface flows.	Moderate	Moderate	None	Moderate	Moderate

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A054	0.007	High	0.0070	0	007	Habitat located entirely under footprint of the Tomatin North Junction, complete loss of habitat.	Major	Large	None	Major	Large
A042	0.142	Very High	0	0		Habitat located 40m south and upslope of the proposed Tomatin North Junction, featuring the new carriageway, cuttings and drainage ditches near to this area. No direct or indirect loss anticipated.	Negligible	Neutral	None	Negligible	Neutral
A047	0.035	Medium	0.0282	0		Habitat located mostly under the scheme footprint, under the new Tomatin North junction and associated cuttings, with a small area located upslope of the scheme. Direct loss of habitat anticipated.	Major	Large	None	Major	Large
A061	0.164	Medium	0.1618	0.001	007	Habitat located nearly entirely within the footprint of the Proposed Scheme at the new Tomatin North Junction, featuring new areas of hardstanding. Direct loss anticipated.	Major	Large	None	Major	Large
A402	0.049	Medium	0.0485	0		Habitat within the Proposed Scheme footprint, where new cuttings associated with the mainline carriageway widening is proposed. Almost complete loss of habitat anticipated.	Major	Large	None	Major	Large
B058	0.445	Medium	0.1066	0		Habitat located partially under the Proposed Scheme footprint, where the mainline carriageway is widened and associated drainage is required, with some direct loss. The remainder of the area is located upslope with no impact anticipated.	Moderate	Moderate	None	Moderate	Moderate
B005	0.119	Medium	0	0		Habitat located 190m north and upslope of the proposed scheme, where the mainline carriageway is being widened and new drainage ditches are located upslope of the scheme. No loss anticipated.	Negligible	Neutral	None	Negligible	Neutral
B055	0.057	Medium	0.0006	0		Habitat located partially within and immediately upslope of the Proposed Scheme, where the mainline carriageway is being widened and new drainage ditches are located upslope of the scheme. Very minor loss anticipated.	Negligible	Neutral	None	Negligible	Neutral
B056	0.085	Medium	0	0		Habitat located 25m north and immediately upslope of the Proposed Scheme, where the mainline carriageway is being widened and new drainage ditches are located upslope of the scheme. No loss anticipated.	Negligible	Neutral	None	Negligible	Neutral
B061	0.165	Medium	0.0316	0		Habitat located partially under the Proposed Scheme footprint, with a small area of direct loss. The remainder of the area is located upslope with no impact anticipated.	Moderate	Moderate	None	Moderate	Moderate
B066	0.637	Medium	0.1027	0		Habitat located partially under the Proposed Scheme footprint, where the mainline carriageway is widened and associated drainage is required, with some direct loss. The remainder of the area is located upslope with no impact anticipated.	Moderate	Moderate	None	Moderate	Moderate
B021	0.093	Medium	0.0911	0		Habitat located entirely under the Proposed Scheme footprint, where new drainage ditches for the mainline carriageway are proposed. Complete loss of habitat anticipated.	Major	Large	None	Major	Large
B064	0.262	Medium	0	0		Habitat located 20m north and upslope of the proposed scheme, where the mainline carriageway is being widened and new drainage ditches are located upslope of the scheme. No loss anticipated.	Negligible	Neutral	None	Negligible	Neutral
B020	0.075	Medium	0.0751	0		Habitat located entirely within the Proposed Scheme footprint, immediately downslope of proposed drainage ditches within an existing area of cutting. Complete direct loss of habitat.	Major	Large	None	Major	Large
B079	0.222	Medium	0.2192	0		Habitat located almost entirely within the Proposed Scheme footprint, where a proposed SuDs access track is located and associated drainage ditches. A small area is located immediate upslope which is unlikely to be affected. Direct loss of habitat anticipated.	Major	Large	None	Major	Large

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B006	0.118	Medium	0	0		Habitat located 100m north and upslope of the proposed scheme, where the mainline carriageway is being widened and new drainage ditches are located upslope of the scheme. No loss anticipated.	Negligible	Neutral	None	Negligible	Neutral
B013	0.162	Medium	0	0		Habitat located 135m north and upslope of the proposed scheme, where the mainline carriageway is being widened and new drainage ditches are located upslope of the scheme. No loss anticipated.	Negligible	Neutral	None	Negligible	Neutral
B070	0.735	Medium	0	0		Habitat located 40m north-west and upslope of the Proposed Scheme, where a new SuDs pond and access track is proposed, and associated new drainage ditches. No loss anticipated.	Negligible	Neutral	None	Negligible	Neutral
B081	0.084	High	0.0801	0		Habitat located almost entirely within the Proposed Scheme footprint, where a proposed SuDs access track is located and associated drainage ditches. Two small areas are located both upslope and downslope, with drainage ditches likely to intercept any groundwater flow. A combination of direct and indirect loss anticipated.	Major	Large	For GWDTE areas downslope: Use of permeable fill in within track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Major	Large
B076	0.084	High	0.0837	0		Habitat located under scheme footprint at the Allt Creag Bheithin stream realignment. Complete loss of habitat.	Major	Large	None	Major	Large
B085	0.591	High	0	0		Habitat located downslope of the upgraded SuDs access track, and associated drainage ditches. Some changes to subsurface flows downslope may impact this area.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill in within track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
B090	0.194	Very High	0.1742	0		Habitat located partially under the Proposed embankments and drainage ditches associated with mainline carriageway widening, with a small proportion of the area downslope of this. Combination of direct loss under footprint, with drainage ditches downslope potentially reducing flows to the area.	Major	Very Large	For GWDTE areas downslope: Use of permeable fill in within embankment and track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Moderate	Large
B093	0.133	High	0.0266	0		Habitat located partially within the Proposed Scheme footprint where new drainage ditches are proposed at the base of new embankment, with the majority located downslope of this. A small area of direct loss is anticipated, with impacts to subsurface flows downslope likely.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill in within embankment and track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
B100	0.469	High	0.0125	0		Habitat located partially under the scheme footprint, where a SuDs pond and drainage ditch is proposed adjacent to a new SuDs track and mainline carriageway. Minor direct loss anticipated, with impacts to subsurface flows downslope likely due to the pond and ditches upslope cutting off flow.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill in within embankment and track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to	Minor	Slight

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									determine groundwater dependency.		
B099	0.472	Very High	0	0		Habitat located 60m north and downslope of the Proposed Scheme, where a new embankment and drainage ditches are proposed. Due to its location along the watercourse, no indirect impacts are anticipated.	Negligible	Neutral	None	Negligible	Neutral
B107	0.549	Medium	0.2607	0		Habitat located partially under the embankment associated with mainline widening, with new drainage ditches and temporary construction ponds at the base of the embankment. Some direct loss anticipated, with proposed drainage ditches likely to reduce groundwater flows.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill in within embankment and track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Moderate	Moderate
B106	0.492	High	0.4848	0		Habitat located entirely within the Proposed Scheme footprint, where new embankments, SuDs pond and access track are located. Complete loss of habitat.	Major	Large	None	Major	Large
B189	0.036	Medium	0.0252	0		Habitat located partially under scheme footprint, immediately upslope of drainage ditches and embankment associated with mainline widening. Some direct loss anticipated, with no indirect loss of habitat upslope.	Moderate	Moderate	None	Moderate	Moderate
B105	0.106	Medium	0.1055	0		Habitat located entirely within the Proposed Scheme footprint, where new embankments and access track are located. Complete loss of habitat.	Major	Large	None	Major	Large
B185	0.331	Medium	0.3308	0		Habitat located entirely under the Proposed Scheme footprint, including mainline widening, access tracks and the Dalmagarry Burn realignment. Complete loss of habitat anticipated.	Major	Large	None	Major	Large
B179	0.449	High	0	0		Habitat located downslope of the new access track north of the realigned Dalmagarry Burn. Due to the increase in impermeable area upslope and new access track, there may be changes hydrological flow.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill in within tracks to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
B183	0.080	Medium	0.0803	0		Habitat located entirely under the Proposed Scheme footprint, where the mainline carriageway is widened. Complete loss of habitat anticipated.	Major	Large	None	Major	Large
B180	1.640	High	0.5458	0	51	Habitat located partially under the scheme footprint, where a new SuDs pond and access track is located along the Dalmagarry Burn, with part of the area located downslope of the new track. Some direct loss anticipated, and potential changes to hydrological flow downslope.	Moderate	Large	For GWDTE areas downslope: Use of permeable fill in within tracks to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Moderate	Large
B026	0.144	High	0.1437	0		Habitat located along the proposed stream realignment of an unnamed watercourse under the mainline widening, with associated embankments and drainage ditches also proposed. Complete loss of habitat.	Major	Large	None	Major	Large
B149	0.046	Medium	0	0		Habitat located 205m east and downslope of the new Ruthven Road and Dalmagarry Burn realignment. Due to the topographical location of the habitat in relation to the scheme, no impact is anticipated.	Negligible	Neutral	None	Negligible	Neutral

Polygon ID	Area (ha)	Sensitivity	Direct loss under Proposed Scheme (ha)	Indirect loss from Cutting (ha)	Cutting No	Description of Impact	Potential Magnitude	Potential Significance	Proposed Mitigation	Residual Effect Magnitude	Residual Effect Significance
B155	0.118	High	0.1177	0	43	Habitat located entirely within the Proposed Scheme, within the earthworks between the mainline widening and Ruthven-Tomatin Link Road. Complete loss of habitat.	Major	Large	None	Major	Large
B051	0.101	Medium	0.1012	0		Habitat located entirely within the Proposed Scheme footprint where the mainline carriageway is being dualled. Complete loss of habitat.	Major	Large	None	Major	Large
B040	0.677	High	0.0072	0		Habitat located partially under the drainage ditch associated with the Ruthven-Tomatin link road, with the remainder located downslope. Some direct loss is anticipated. Drainage ditches upslope have the potential to cut off overland surface flow to the habitat, so changes to hydrological flow may result in indirect loss.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill in within embankment and track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
B030	0.089	High	0	0		Habitat located 120m east and downslope of the Proposed Scheme, where the new Ruthven-Tomatin Link Road and associated earthworks are proposed. An increase in impermeable area upslope may have some local alterations to groundwater flow.	Minor	Slight	None	Minor	Slight
B157	0.169	High	0.0097	0		Habitat located within the scheme footprint at the start of the mainline carriageway dualling at Tomatin, and adjacent to an access track being realigned, with a small area of direct loss anticipated. A new embankment is proposed of the area, with potential to change groundwater flow.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill within embankment to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
B176	0.272	High	0	0		Habitat located 165m north and downslope of the Proposed Scheme, where an embankment and stream realignment is proposed. Due to the presence of a stream between the scheme and habitat, no indirect loss is anticipated.	Negligible	Neutral	None	Negligible	Neutral
X041	0.359	Medium	0.0613	0		Habitat located partially within the Proposed Scheme footprint, within a watercourse realignment downslope of the B9154. Some of the area will be directly lost, with a small proportion of the remaining area immediately downslope, which may be impacted by changes to hydrological flow.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill within stream realignment. Included in baseline pre-construction monitoring to determine groundwater dependency.	Moderate	Moderate
B161	0.067	High	0	0		Habitat located 140m south-east and upslope of the start of the mainline carriageway dualling. No direct or indirect loss anticipated.	Negligible	Neutral	None	Negligible	Neutral
B176	0.149	High	0	0		Habitat located 140m north-west of the Proposed Scheme, where a small cutting is proposed. Due to the topography between the habitat and nearest area of earthworks, no impact is predicted.	Negligible	Neutral	None	Negligible	Neutral
B197	0.022	Medium	0.0222	0		Habitat located entirely within the Proposed Scheme where the new mainline carriageway is located. Complete loss of habitat.	Major	Large	None	Major	Large
X049	0.137	Medium	0	0		Habitat located partially within the Proposed Scheme footprint, within a watercourse realignment downslope of the B9154. Some of the area will be directly lost, with the remaining area immediately downslope may be impacted by changes to hydrological flow.	Major	Large	For GWDTE areas downslope: Use of permeable fill within stream realignment. Included in baseline pre-construction monitoring to determine groundwater dependency.	Major	Large

Polygon ID	Area (ha)	Sensitivity	Direct loss under Proposed Scheme (ha)	Indirect loss from Cutting (ha)	Cutting No	Description of Impact	Potential Magnitude	Potential Significance	Proposed Mitigation	Residual Effect Magnitude	Residual Effect Significance
X053	0.069	Very High	0.0202	0		Habitat located partially within the Proposed Scheme footprint, within a watercourse realignment downslope of the B9154. Some of the area will be directly lost, with no changes to flows downslope predicted.	Moderate	Large	None	Moderate	Large
X056	0.060	Medium	0.0273	0		Habitat located partially within the Proposed Scheme footprint, within a watercourse realignment downslope of the B9154. Some of the area will be directly lost, with a small proportion of the remaining area immediately downslope, which may be impacted by changes to hydrological flow.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill within stream realignment. Included in baseline pre-construction monitoring to determine groundwater dependency.	Moderate	Moderate
X040	0.247	Medium	0.0001	0		Habitat located partially within Proposed Scheme footprint, where a stream is realigned under the B9154. A small area of direct loss is predicted, with no significant changes to hydrological flow predicted.	Minor	Slight	None	Minor	Slight
X034	0.223	High	0.0237	0		Habitat located partially under the Proposed Scheme footprint, where a watercourse is realigned under the B-road, with the remaining area located parallel and adjacent to the scheme. A small area of direct loss is anticipated, with no changes to flow downslope.	Minor	Slight	None	Minor	Slight
X032	0.075	Medium	0.0375	0		Habitat located partially under the Proposed Scheme footprint, where a watercourse is realigned under the B-road, with the remaining area located parallel and adjacent to the scheme. A small area of direct loss is anticipated, with no changes to flow downslope.	Moderate	Moderate	None	Moderate	Moderate
X014	1.109	Medium	0	0		Habitat located 125m north-east and downslope of the proposed Moy South LILO, which features new junction alignment and associated embankments. No measureable changes in hydrological flow are anticipated given the small increase in impermeable area upslope.	Minor	Slight	None	Minor	Slight
X015	0.128	High	0	0		Habitat located 60m north-east and downslope of the proposed Moy LILO junction, where a new road is proposed, with associated embankments and drainage ditches, which have the potential to cut off overland surface flow to the habitat.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill within embankment to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
X030	0.169	Medium	0	0		Habitat located 50m north-east and downslope of the Proposed Scheme where a stream alignment is proposed, running parallel to the B-road. The habitat runs along an existing watercourse, with the watercourse unlikely to be reduced in flow. Due to the lack of construction required upslope of this habitat, no significant changes are predicted.	Negligible	Neutral	None	Negligible	Neutral
X028	0.232	High	0	0		Habitat located 110m east and downslope of the Proposed Scheme where a stream alignment is proposed, running parallel to the B-road. The habitat runs along an existing watercourse, with the watercourse unlikely to be reduced in flow. Due to the limited earthworks required upslope of this habitat, no significant changes are predicted.	Negligible	Neutral	None	Negligible	Neutral
X028	0.736	High	0	0		Habitat located 65m east and downslope of the Proposed Scheme where a stream alignment is proposed, running parallel to the B-road. The habitat runs along an existing watercourse, with the watercourse unlikely to be reduced in flow. Due to the limited earthworks required upslope of this habitat, no significant changes are predicted.	Negligible	Neutral	None	Negligible	Neutral
X026	0.185	High	0.0018	0		Habitat located slightly within and immediately adjacent downslope of the Proposed Scheme, perpendicular east of the B-road at Moy, with the remainder of the habitat further downslope located parallel to the scheme.	Negligible	Neutral	None	Negligible	Neutral

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						Due to the limited earthworks downslope of the existing B-road, no significant changes in hydrological flow are anticipated.					
X026	0.076	Medium	0	0		Habitat located 35m east and downslope of the Proposed Scheme, perpendicular to the B-road. Given the presence of the B-road between the scheme and the habitat, there is unlikely to be any significant change in hydrological flow.	Negligible	Neutral	None	Negligible	Neutral
X013	3.354	Medium	0.9683	0		Habitat located partially within footprint of the Moy South LILO, including proposed embankments, drainage ditches and SuDs ponds, all of which have the potential to cut off overland surface flow to the habitat. Direct loss likely, with further indirect loss predicted as a result of changes to subsurface flow.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill within embankment to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Moderate	Moderate
X011	0.066	Medium	0	0		Habitat located 40m north-east and downslope of the Moy South LILO, where a new carriageway, embankment, drainage ditches and temporary SuDs ponds are proposed, all of which have the potential to cut off overland surface flow to the habitat. Some changes to hydrological flow may occur.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill within embankment to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
C050	0.193	High	0.1004	0		Habitat located partially under the Proposed Scheme Footprint, with the remainder of the area located downslope. Mainline carriageway widening, new SuDs access track, drainage ditches and watercourse realignment are all planned within this area, with a surface water discharge location also planned. Some direct loss is anticipated, with proposed ditches and new surface waterfall outfall locations all discharging into the watercourse. As the habitat is likely to be primarily fed by the watercourse, this area is not likely to be impacted by changes to hydrological flow.	Major	Large	None	Major	Large
X007	0.054	Medium	0	0		Habitat located 175m east and downslope of the Proposed Scheme, where a new access track and associated drainage ditches are proposed. Given the distance from the scheme, this area is unlikely to be altered by changes to hydrological flow.	Negligible	Neutral	None	Negligible	Neutral
X006	0.077	Medium	0	0		Habitat located 200m north-east of the Proposed Scheme, where the access track to Dalmagarry Farm is upgraded. Due to the local topography, this area is not directly downslope of the proposed earthworks and is unlikely to be affected by changes to hydrological flow.	Negligible	Neutral	None	Negligible	Neutral
X005	0.087	Very High	0	0		Habitat located 165m north-east of the Proposed Scheme, where the access track to Dalmagarry Farm is upgraded. Due to the local topography, this area is not directly downslope of the proposed earthworks and is unlikely to be affected by changes to hydrological flow.	Negligible	Neutral	None	Negligible	Neutral
X004	0.376	High	0	0		Habitat located perpendicular and immediately adjacent to the Proposed Scheme, where access tracks and associated drainage is being updated at Dalmagarry Farm. No direct loss is anticipated, with the habitat located along gentle slopes immediately downslope of the farm, with no changes to hydrological flow feeding the area predicted.	Negligible	Neutral	None	Negligible	Neutral
C001	0.098	High	0	0		Habitat located 100m north-west and upslope of the Proposed Scheme, located perpendicular to the scheme, where new drainage ditches are proposed at the top of the existing cutting. No direct or indirect losses are anticipated.	Negligible	Neutral	None	Negligible	Neutral

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C058	0.463	Medium	0.3659	0		Habitat located partially under Proposed Scheme footprint, with the remainder located immediately downslope. Infrastructure includes a new SuDs pond access track and drainage ditches, which may cut off flow. Most of the habitat will be lost under the Proposed Scheme, with some changes to hydrological flow likely due to the scheme acting as a barrier to flow.	Major	Large	For GWDTE areas downslope: Use of permeable fill within embankments and ditches to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Major	Large
C049	0.298	High	0.2983	0		Habitat is located directly under the Proposed Scheme footprint, where new embankments are proposed where the mainline carriageway is widened, SuDs pond access tracks and associated drainage ditches. Complete loss of habitat.	Major	Large	None	Major	Large
C048	0.301	Very High	0.3005	0		Habitat is located directly under the Proposed Scheme footprint, where new embankments are proposed where the mainline carriageway is widened, SuDs pond access tracks and associated drainage ditches. Complete loss of habitat.	Major	Very Large	None	Major	Very Large
C059	9.605	Medium	0.6910	0		Habitat located partially within the Proposed Scheme footprint, where a new SuDs pond access track, drainage ditches and temporary SuDs ponds are located, with direct loss anticipated. The remaining area is located downslope of the scheme, where the new access track and ditches have the potential to reduce and cut off overland flow, with changes to hydrological flow likely.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill within embankments and ditches to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
C047	0.816	High	0.8164	0		Habitat is located directly under the Proposed Scheme footprint, where new embankments are proposed where the mainline carriageway is widened, SuDs pond access tracks and associated drainage ditches. Complete loss of habitat.	Major	Large	None	Major	Large
C046	1.612	Medium	0.0941	0		Habitat is located partially under the scheme footprint, where a new SuDs access track and drainage ditches are proposed, with the majority of the area located downslope of the access track. Some direct loss is anticipated. The remaining area is located downslope, where the new access track and ditches have the potential to reduce and cut off overland flow, therefore changes to hydrological flow are likely.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill within embankments and ditches to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
C043	0.286	High	0.1895	0		Habitat located partially within the scheme footprint, where a new SuDs access track is located, and stream realignment of the Allt na Loinne Moire. The remaining area is located parallel and located at the same height topographically, with the footprint of proposed cuttings along the new track upslope potentially altering flow.	Moderate	Large	For GWDTE areas downslope: Use of permeable fill within embankments and ditches to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Moderate	Large
C092	0.320	High	0.271	0		Habitat located almost entirely within the Proposed Scheme footprint, where new embankments, culverts, stream realignments, temporary SuDs ponds and access tracks are proposed. Direct loss is anticipated, with some changes to hydrological flow likely due to the presence of new embankments upslope of the habitat.	Major	Large	For GWDTE areas downslope: Use of permeable fill within embankments and ditches to maintain flow, and inclusion of cross-formation drains.	Major	Large

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									Included in baseline pre-construction monitoring to determine groundwater dependency.		
C082	0.043	Very High	0	0		Habitat located 30m north-east, parallel and downslope to the Proposed Scheme where the mainline carriageway is being widened. The habitat sits within a depression/topographic low point being fed by slopes surrounding the entire area. As a result, the changes upslope to the south-west are not likely to have any noticeable impact on hydrological flow to the habitat.	Negligible	Neutral	None	Negligible	Neutral
C117	0.134	High	0.0217	0		Habitat located partially under the Proposed Scheme footprint, where land has been identified for construction and temporary works and some direct loss anticipated. As this habitat is likely to be fed primarily by surface water flow, hydrological flows from surface water runoff from the surrounding slopes is unlikely to change.	Moderate	Large	None	Moderate	Large
C091	0.035	Medium	0.0174	0		Habitat located partially under the Proposed Scheme footprint, where a watercourse realignment downstream of a proposed culvert within an upgraded access track is proposed. Some direct loss of habitat is anticipated, with some changes to hydrological flow likely due to the presence of new drainage ditches upslope, which may cut off flow.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill within embankments and ditches to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Moderate	Moderate
C094	0.424	Medium	0.4243	0		Habitat located almost entirely within proposed where embankments associated with mainline widening is proposed, with direct loss of habitat. Some changes to hydrological flow are anticipated for areas downslope below the proposed embankment.	Major	Large	For GWDTE areas downslope: Use of permeable fill within embankments to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Major	Large
C096	0.079	High	0.0789	0		Habitat located entirely under the Proposed Scheme footprint, where a new access track, drainage ditches, stream realignment and temporary SuDs ponds are proposed. Complete loss of habitat.	Major	Large	None	Major	Large
C101	0.062	High	0.0412	0		Habitat located primarily under the Proposed Scheme footprint, where a new access track, drainage ditches and stream realignment are proposed. Some direct loss anticipated, with potential for changes to subsurface flows where the new track and ditches cut off hydrological flow.	Major	Large	For GWDTE areas downslope: Use of permeable fill within embankments to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Major	Large
C148	0.226	High	0.0756	0		Habitat located partially under the Proposed Scheme footprint, where new drainage ditches at the base of the new embankment is proposed. Direct loss is anticipated. The drainage ditches running perpendicular to the habitat likely to cut off any surface runoff, resulting in changes to hydrological flow feeding the area.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill within embankments and drains to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Moderate	Moderate

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C122	0.143	High	0.0493	0		Habitat located partially under the Proposed Scheme footprint, where land has been identified for construction and temporary works and some direct loss anticipated. Some indirect loss anticipated.	Moderate	Moderate	None	Negligible	Neutral
C132	0.171	High	0	0		Habitat located 175m east and perpendicular to the Proposed Scheme footprint, in an area identified for construction and temporary works. Due to the topography of the area, with a small hill located between the habitat and the scheme, this area will not be impacted by any changes to hydrological flow.	Negligible	Neutral	None	Negligible	Neutral
C130	0.030	Medium	0	0		Habitat located 85m east and perpendicular to the Proposed Scheme footprint, in an area identified for construction and temporary works. Due to the topography of the area, with a small hill located between the habitat and the scheme, this area will not be impacted by any changes to hydrological flow.	Negligible	Neutral	None	Negligible	Neutral
C130	1.123	Medium	0	0		Habitat located 45m east and perpendicular to the Proposed Scheme, where a number of cuttings associated with the Tomatin-Ruthven link road are proposed. The habitat is located topographically lower but due the local topography, the Proposed Scheme is not located directly upslope, therefore no impact on hydrological flow anticipated.	Negligible	Neutral	None	Negligible	Neutral
C128	0.124	Medium	0	0		Habitat located 75m east of the Proposed Scheme, where new cuttings associated with the new Tomatin-Ruthven access road are proposed. The area is separated by a small hill, with the habitat not located immediately downslope of any earthworks. Therefore no changes to hydrological flow feeding this habitat are likely.	Negligible	Neutral	None	Negligible	Neutral
C199	0.897	Medium	0	0		Habitat located 50m east of the Proposed Scheme, where the new Tomatin-Ruthven link road and associated cuttings is proposed. The area is separated by a small hill, with the habitat not located immediately downslope of any earthworks. Therefore no changes to hydrological flow feeding this habitat are likely.	Negligible	Neutral	None	Negligible	Neutral
C124	0.348	High	0	0		Habitat located 140m north-east and downgradient of the Proposed Scheme, where a new access track and associated cuttings are proposed. As the habitat is not located immediately downslope of the area, no changes to hydrological flow to the area are likely.	Negligible	Neutral	None	Negligible	Neutral
C125	0.178	High	0	0		Habitat located 75m east and downslope of the Proposed Scheme, where a new access track and associated cuttings are proposed. As the habitat is not located immediately downslope of the area, no changes to hydrological flow to the area are likely.	Minor	Slight	None	Minor	Slight
C147	0.067	Very High	0.0008	0		Habitat located within and downslope of the Proposed Scheme footprint, where the Tomatin-Ruthven link road embankments and drainage ditches are proposed. A small area of direct loss is anticipated. The drainage ditches along the embankment toe may cut off flow to the area, resulting in changes.	Moderate	Large	For GWDTE areas downslope: Use of permeable fill within embankments and drains to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Moderate
C144	0.866	Very High	0.3517	0		Habitat located partially under the Proposed Scheme footprint, where the Tomatin-Ruthven link road embankment, drainage ditches and temporary SuDs ponds are located. Some of this area will be directly lost, with the remaining habitat downslope indirectly impacts by changes to hydrological flow where the proposed ditches may cut off flow.	Moderate	Large	For GWDTE areas downslope: Use of permeable fill within embankments and drains to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to	Moderate	Large

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									determine groundwater dependency.		
C188	0.752	High	0	0		Habitat located 20m east and downslope of the Proposed Scheme footprint, where the Tomatin-Ruthven link road embankments and drainage ditches are proposed. The drainage ditches along the embankment toe may cut off flow to the area, resulting in changes.	Moderate	Large	For GWDTE areas downslope: Use of permeable fill within embankments and drains to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
C140	0.067	High	0	0		Habitat located 125m east and downslope of the Proposed Scheme footprint, where the Tomatin-Ruthven link road embankments and drainage ditches are proposed. The drainage ditches along the embankment toe may cut off flow to the area, resulting in changes.	Moderate	Large	For GWDTE areas downslope: Use of permeable fill within embankments and drains to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
C017	0.858	High	0	0		Habitat located 15m east and downslope of the proposed Tomatin-Ruthven link road, featuring new embankments, drainage ditches, stream realignments and temporary SuDs ponds. New drainage ditches may cut off flow downslope, with an increase in impermeable area reducing surface runoff also, with some indirect loss possible.	Moderate	Large	For GWDTE areas downslope: Use of permeable fill within embankments and drains to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
C023	0.103	High	0	0		Habitat located 150m east and downslope of the proposed Tomatin-Ruthven link road, with new cuttings, stream realignment, embankments and drainage ditches all located upslope. Some indirect loss may be anticipated as a result of drainage ditches upslope cutting off flow to downslope areas, although this is likely to be limited in extent.	Minor	Slight	None	Minor	Slight
C019	0.032	High	0	0		Habitat located 140m east and downslope of the Tomatin-Ruthven link road and access to Tigh an Allt, featuring small cuttings. As the cuttings are not immediately upslope, with a small hill in between, the changes to hydrological flow are limited in extent.	Negligible	Neutral	None	Negligible	Neutral
C020	0.204	High	0	0		Habitat located approximately 160m east and downslope of the proposed Tomatin-Ruthven Link road, featuring new cuttings, drainage ditches, temporary SuDs ponds and a stream realignment. Given the presence of the existing road and distance between the area, no significant change in hydrological flow is likely.	Negligible	Neutral	None	Negligible	Neutral
C021	0.236	High	0	0		Habitat located approximately 200m east and downslope of the proposed Tomatin-Ruthven Link road, featuring cuttings, drainage ditches, temporary SuDs ponds and a stream realignment. Given the presence of the existing road and distance between the area, no significant change in hydrological flow is likely.	Negligible	Neutral	None	Negligible	Neutral
C022	0.163	High	0	0		Habitat located approximately 200m east and downslope of the proposed Tomatin-Ruthven Link road, featuring cuttings, drainage ditches, temporary SuDs ponds and a stream realignment. Given the presence of the existing road and distance between the area, no significant change in hydrological flow is likely.	Negligible	Neutral	None	Negligible	Neutral

Polygon ID	Area (ha)	Sensitivity	Direct loss under Proposed Scheme (ha)	Indirect loss from Cutting (ha)	Cutting No	Description of Impact	Potential Magnitude	Potential Significance	Proposed Mitigation	Residual Effect Magnitude	Residual Effect Significance
C024	0.485	High	0	0		Habitat located immediately adjacent to a proposed SuDs access pond in the south, with the remaining area downslope of the proposed Tomatin-Ruthven link road including drainage ditches and temporary SuDs ponds. Any indirect impacts to the habitat as a result of hydrological changes would be limited in extent.	Minor	Slight	None	Minor	Slight
C033	0.966	Medium	0.5326	0		Habitat located partially under the Proposed Scheme footprint, featuring the proposed Tomatin-Ruthven link road, temporary SuDs ponds and permanent SuDs ponds. The remaining area located east and downslope may be impacted by changes to hydrological flow where ditches may cut off surface water flow.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill within embankments and drains to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
C026	0.072	High	0.0723	0		Habitat located directly within the Proposed Scheme footprint, featuring a stream realignment, temporary SuDs ponds and drainage ditches associated with the mainline widening at Tomatin. Complete loss of habitat.	Major	Large	None	Major	Large
C180	0.361	High	0.2824	0	95	Habitat located entirely under the Proposed Scheme footprint, where a new SuDs pond access track and attenuation pond are proposed. Complete loss of habitat.	Major	Large	None	Major	Large
C184	0.458	High	0.0990	0.059	95	Habitat located partially within the Proposed Scheme footprint at Tomatin Junction where a new SuDs pond access track is proposed, as well as a surface water outfall into the River Findhorn. Part of the habitat is located within influence of cuttings at the junction, where groundwater levels may be impacted. The remainder of the habitat lies downslope of the works at the junction, where new access tracks and ditches have the potential to cut off flow.	Moderate	Large	Where GWDTEs will be impacted by groundwater flow: groundwater entering cuttings will be directed to the downgradient side and allowed to infiltrate. For GWDTE areas downslope: Use of permeable fill within embankments and drains to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
C182	0.789	High	0	0		Habitat located 12m east of the Proposed Scheme, where a new SuDs pond and associated access track is proposed at Tomatin Junction. The habitat is also located 220m downslope of the mainline carriageway widening works, where a new embankment, ditch, stream realignment and temporary SuDs pond is proposed. The changes in hydrological flow are likely to be minimal given the distance between the works and the habitat.	Negligible	Neutral	None	Negligible	Neutral
C183	0.099	Medium	0.0261	0.017	95	Habitat located partially within the Proposed Scheme footprint at Tomatin Junction where surface water outfall discharges into the River Findhorn. Part of the habitat is located within influence of cuttings at the junction, where groundwater levels may be impacted. The remainder of the habitat lies downslope of the works at the junction, where new access tracks and ditches have the potential to cut off flow.	Moderate	Moderate	Where GWDTEs will be impacted by groundwater flow: groundwater entering cuttings will be directed to the downgradient side and allowed to infiltrate. For GWDTE areas downslope: Use of permeable fill within embankments and drains to maintain flow, and inclusion of cross-formation drains.	Minor	Slight

Polygon ID	Area (ha)	Sensitivity	Direct loss under Proposed Scheme (ha)	Indirect loss from Cutting (ha)	Cutting No	Description of Impact	Potential Magnitude	Potential Significance	Proposed Mitigation	Residual Effect Magnitude	Residual Effect Significance
									Included in baseline pre-construction monitoring to determine groundwater dependency.		
C185	0.592	Medium	0.2161	0.198	95	Habitat located partially within the Proposed Scheme footprint at Tomatin Junction where a new SuDs pond access track is proposed. Part of the habitat is located within influence of cuttings at the junction, where groundwater levels may be impacted. The remainder of the habitat lies downslope of the works at the junction, where new access tracks and ditches have the potential to cut off flow.	Moderate	Moderate	Where GWDTEs will be impacted by groundwater flow: groundwater entering cuttings will be directed to the downgradient side and allowed to infiltrate. For GWDTE areas downslope: Use of permeable fill within embankments and drains to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Moderate	Moderate
C184	0.130	High	0.0990	0.053	95	Habitat located primarily under the Proposed Scheme footprint, where a new access track and associated cuttings are proposed. The remaining area located outside of the scheme footprint may be impacted by changes to groundwater levels from cutting 95, as well as changes to hydrological flow from the new tracks upslope.	Major	Large	Where GWDTEs will be impacted by groundwater flow: groundwater entering cuttings will be directed to the downgradient side and allowed to infiltrate. For GWDTE areas downslope: Use of permeable fill within embankments and drains to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
C160	0.065	Medium	0.0649	0	95	Habitat located within the scheme footprint, under cuttings associated with the proposed Tomatin Junction layout, and other areas associated with construction and temporary works. Complete loss of habitat.	Major	Large	None	Major	Large
C155	0.071	Medium	0.0711	0	95	Habitat located entirely within the Proposed Scheme footprint at Tomatin Junction, beneath the carriageway and associated cuttings. Complete loss of habitat.	Major	Large	None	Major	Large
C174	0.231	High	0.0133	0		Habitat located partially within the Proposed Scheme footprint, where a stream realignment under the mainline carriageway is proposed. There will be a small area of direct loss, with very minor changes in track layout immediately upslope not likely to cause significant changes downslope.	Minor	Slight	None	Minor	Slight
C168	0.171	High	0	0	95	Habitat located immediately adjacent to the Proposed Scheme, where an existing access track is being upgraded south-east of the Tomatin Junction. As there are no proposed earthworks immediately upslope of this habitat, no impact is anticipated.	Negligible	Neutral	None	Negligible	Neutral
C169	0.294	Very High	0	0		Habitat located 150m north-east of the Proposed Scheme, where an existing access track is being upgraded south-east of the Tomatin Junction. As there are no proposed earthworks immediately upslope of this habitat, no impact is anticipated.	Negligible	Neutral	None	Negligible	Neutral

Polygon ID	Area (ha)	Sensitivity	Direct loss under Proposed Scheme (ha)	Indirect loss from Cutting (ha)	Cutting No	Description of Impact	Potential Magnitude	Potential Significance	Proposed Mitigation	Residual Effect Magnitude	Residual Effect Significance
C170	0.104	High	0	0		Habitat located 170m north-east of the Proposed Scheme, where an existing access track is being upgraded south-east of the Tomatin Junction. As there are no proposed earthworks immediately upslope of this habitat, no impact is anticipated.	Negligible	Neutral	None	Negligible	Neutral
C173	1.729	High	0	0		Habitat located 12m east and adjacent to the Proposed Scheme, where an existing access track is being upgraded south-east of the Tomatin Junction. As there are no proposed earthworks immediately upslope of this habitat, no impact is anticipated.	Negligible	Neutral	None	Negligible	Neutral
C163	0.018	High	0.0169	0		Habitat located partially under the Proposed Scheme footprint, downslope of new embankments and also including areas of temporary construction works. This area will be impacted by direct loss, as well as changes to hydrological flow upslope.	Major	Large	For GWDTE areas downslope: Use of permeable fill within embankments and drains to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Major	Large
C176	0.127	Medium	0	0		Habitat located 55m east and upslope of the Proposed Scheme, where a new SuDs pond and access track is proposed at Tomatin Junction. No direct or indirect loss of habitat anticipated.	Negligible	Neutral	None	Negligible	Neutral
C187	0.047	Medium	0.0473	0	95	Habitat located entirely within the scheme footprint, under the carriageway, embankments and drainage ditches associated with the proposed Tomatin Junction layout. Complete loss of habitat.	Major	Large	None	Major	Large
C166	0.202	High	0.1524	0		Habitat located partially under the Proposed Scheme footprint, where an existing track is upgraded, as well as a watercourse realignment and temporary SuDs pond. Direct loss of the area anticipated. Minor changes in hydrological flow may occur as a result of the track upgrade.	Major	Large	None	Major	Large
C179	3.013	High	1.2053	0	95	Habitat located partially within the Proposed Scheme at Tomatin Junction, featuring new road, drainage ditches, attenuation ponds and areas for construction works. Direct loss of areas under the footprint, with indirect loss likely as a result of changes to areas downslope where drainage ditches may cut off flow.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill within embankments and drains to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Moderate	Moderate
C099	0.064	High	0.0645	0		Habitat located entirely within the Proposed Scheme footprint, where a stream realignment and new drainage ditches are proposed downslope of the mainline carriageway. Complete loss of habitat.	Major	Large	None	Major	Large
C164	0.051	High	0.0515	0		Habitat located under the Proposed Scheme footprint, where a stream realignment and two temporary SuDs ponds are located. Complete loss of habitat.	Major	Large	None	Major	Large
C136	0.038	High	0	0		Habitat located 220m east of the Proposed Scheme, where the new Tomatin-Ruthven link road and associated cuttings is proposed. The area is separated by a small hill, with the habitat not located immediately downslope of any earthworks. Therefore no changes to hydrological flow feeding this habitat are likely.	Negligible	Neutral	None	Negligible	Neutral
J154	0.376	Medium	0.0073	0		Habitat located partially under the Proposed Scheme footprint at Lynebeg, where the existing access track is being upgraded, and the remaining area located upslope.	Minor	Slight	None	Minor	Slight

Polygon ID	Area (ha)	Sensitivity	Direct loss under Proposed Scheme (ha)	Indirect loss from Cutting (ha)	Cutting No	Description of Impact	Potential Magnitude	Potential Significance	Proposed Mitigation	Residual Effect Magnitude	Residual Effect Significance
C186	0.276	Medium	0.2732	0.003	95	Habitat located almost entirely within the Proposed Scheme footprint at Tomatin junction, beneath the carriageway and associated embankments. Major loss of habitat.	Major	Large	Where GWDTEs will be impacted by groundwater flow: groundwater entering cuttings will be directed to the downgradient side and allowed to infiltrate. For GWDTE areas downslope: Use of permeable fill within embankments and drains to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Major	Large
J148	0.669	High	0	0		Habitat located 45m south and upslope of the Proposed Scheme, where the track at Lynebeg is upgraded. No direct or indirect loss anticipated.	Negligible	Neutral	None	Negligible	Neutral
J150	0.128	Medium	0	0		Habitat located 90m south-west and upslope of the Proposed Scheme, where the track at Lynebeg is upgraded. No direct or indirect loss anticipated.	Negligible	Neutral	None	Negligible	Neutral
J140	2.998	High	0	0		Habitat located 60m south-west and upslope of the Proposed Scheme, where the track at Lynebeg is upgraded. No direct or indirect loss anticipated.	Negligible	Neutral	None	Negligible	Neutral
J125	0.662	Very High	0.4645	0		Habitat located partially under the Proposed Scheme at the Lynebeg LILO junction, where a new road alignment, SuDs access pond and associated ditches are proposed. Some direct loss is anticipated, with no indirect impacts on the habitat located upslope of the works.	Major	Very Large	None	Major	Very Large
J135	0.093	High	0	0		Habitat located 120m south and upslope of the Proposed Scheme, where the track at Lynebeg is upgraded. No direct or indirect loss anticipated.	Negligible	Neutral	None	Negligible	Neutral
J133	1.892	High	0	0		Habitat located 160m south and upslope of the Proposed Scheme, where the track at Lynebeg is upgraded. No direct or indirect loss anticipated.	Negligible	Neutral	None	Negligible	Neutral
J129	0.441	Medium	0	0		Habitat located 95m south and upslope of the Proposed Scheme, where the Lynebeg LILO junction is located. No direct or indirect loss anticipated.	Negligible	Neutral	None	Negligible	Neutral
J132	0.384	High	0	0		Habitat located 135m south-west and upslope of the Proposed Scheme, where the Lynebeg LILO junction is located. No direct or indirect loss anticipated.	Negligible	Neutral	None	Negligible	Neutral
J166	0.747	Medium	0.2710	0		Habitat located partially within the Proposed Scheme footprint, where a number of drainage ditches, temporary SuDs ponds and stream alignment associated with mainline widening north of Lynebeg is proposed. The remaining area lies upslope of the Proposed Scheme and will be unaffected.	Moderate	Moderate	None	Moderate	Moderate
J073	0.191	Medium	0.0892	0		Habitat located partially under the Proposed Scheme footprint, where drainage ditches and a stream realignment above a new cutting are located upslope of the northbound A9 carriageway. Some direct loss will occur, with the remaining area unaffected.	Moderate	Moderate	None	Moderate	Moderate
J110	0.899	High	0	0		Habitat located 10m south-west and upslope of the Proposed Scheme, where the mainline carriageway is being widened with drainage ditches and a stream alignment immediately downslope. No impact on this habitat is predicted.	Negligible	Neutral	None	Negligible	Neutral

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J102	0.020	High	0	0		Habitat located 80m south-west and upslope of the Proposed Scheme, where a number of drainage ditches and a stream realignments are proposed for the mainline carriageway widening downslope of the habitat. No impact on this habitat is predicted.	Negligible	Neutral	None	Negligible	Neutral
J074	0.021	High	0.0120	0		Habitat located partially under the Proposed Scheme footprint, where drainage ditches and a stream realignment above a new cutting are located upslope of the northbound A9 carriageway. Some direct loss will occur, with the remaining area unaffected.	Moderate	Large	None	Moderate	Large
J075	1.642	High	0.0058	0		Habitat located partially under the Proposed Scheme footprint, where a stream realignment is located above a new cutting. A small area of direct loss is anticipated, with no indirect losses anticipated.	Minor	Slight	None	Minor	Slight
J076	0.068	High	0	0		Habitat located 65m south-west and upslope of the area, where cuttings along the mainline carriageway and associated drainage ditches are proposed. No impact is anticipated.	Negligible	Neutral	None	Negligible	Neutral
J098	0.020	High	0	0		Habitat located 140m south-west and upslope of the area, where cuttings along the mainline carriageway and associated drainage ditches and stream realignments are proposed. No impact is anticipated.	Negligible	Neutral	None	Negligible	Neutral
J083	0.501	Medium	0.3701	0		Habitat located partially within the Proposed Scheme footprint, where a new cutting is proposed along the northbound carriageway, with new drainage ditches both at the top and bottom of the cutting. Some direct loss is anticipated, with the remaining area upslope not impacted.	Major	Large	None	Major	Large
J050	5.114	Very High	0.9035	0		Habitat located partially within the Proposed Scheme footprint, where a new cutting is proposed along the northbound carriageway, with new drainage ditches both at the top and bottom of the cutting. Some direct loss is anticipated, with the remaining area upslope not impacted.	Moderate	Large	None	Moderate	Large
J047	2.699	Medium	0.0557	0		Habitat located partially under the Proposed Scheme, where new cuttings associated with the Moy Rail bridge are proposed. Some direct loss will occur under the scheme, with the remaining area unaffected.	Minor	Slight	None	Minor	Slight
J049	0.152	High	0	0		Habitat located 75m south-west and upslope of the Proposed Scheme, where new cuttings associated with the Moy Rail bridge are proposed, and new drainage ditches. No impact to this habitat is expected.	Negligible	Neutral	None	Negligible	Neutral
J025	0.079	Medium	0.0790	0		Habitat located entirely within Proposed Scheme footprint, where an estate access track and associated drainage ditches is being upgraded, adjacent to the Dalmagarry Burn. Complete loss of habitat.	Major	Large	None	Major	Large
J046	0.211	Medium	0	0		Habitat located 25m south-east and upslope of the proposed cuttings along the Moy Rail Bridge construction works. Due to its location upslope, no impacts are anticipated.	Negligible	Neutral	None	Negligible	Neutral
J044	0.125	High	0	0		Habitat located 124m south and upslope of new cuttings located at the proposed Moy Rail bridge. No impacts are anticipated.	Negligible	Neutral	None	Negligible	Neutral
J041	0.396	Medium	0	0		Habitat located 145m south-west and upslope of new cuttings located at the proposed Moy Rail bridge. No impacts are anticipated.	Negligible	Neutral	None	Negligible	Neutral
J040	0.937	High	0	0		Habitat located 130m south-east and upslope of new cuttings located at the proposed Moy Rail bridge. No impacts are anticipated.	Negligible	Neutral	None	Negligible	Neutral
J024	0.085	Medium	0.0847	0		Habitat located entirely within Proposed Scheme footprint, where an estate access track and associated drainage ditches is being upgraded, adjacent to the Dalmagarry Burn. Complete loss of habitat.	Major	Large	None	Major	Large
J021	3.378	High	0.2556	0		Habitat located partially within the Proposed Scheme footprint, where the new cycle track and associated drainage ditch is being relocated upslope	Minor	Slight	None	Minor	Slight

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						of the mainline carriageway widening. Some direct loss of habitat, with no indirect impacts occurring.					
BH05	0.064	Medium	0.0351	0	87	Habitat located partially within the Proposed Scheme footprint, where the existing forestry track is being realigned and upgraded, featuring cuttings and drainage ditches. Changes to groundwater levels from dewatering is anticipated to be within the Proposed Scheme footprint, with changes to hydrological flow downslope likely. This area will be impacted by a combination of direct and indirect loss.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill within embankments and drains to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Moderate	Moderate
J042	0.086	Very High	0	0		Habitat located 130m south-east and upslope of new cuttings proposed at the Moy Rail bridge crossing. No impact is anticipated.	Negligible	Neutral	None	Negligible	Neutral
BH06	0.017	Medium	0	0		Habitat located 25m south-west and downslope of an upgraded forestry access track, featuring cuttings that intercept groundwater and drainage ditches. No direct loss anticipated, with changes to hydrological flow downslope where drainage ditches have the potential to cut off flow.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill within embankments and drains to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
BH16	0.295	Medium	0.2807	0		Habitat located partially within Proposed Scheme footprint, where the existing forestry track is being realigned downslope of the existing A9 road. This area features new embankments, and drainage ditches feeding into two stream realignments with new culverts. Some direct loss is anticipated, with flow from the upslope area being redirected to the downslope side, with no significant changes in hydrological flow.	Major	Large	None	Major	Large
BH15	0.822	Medium	0.0559	0		Habitat located partially within the Proposed Scheme footprint, where drainage ditches and stream realignments associated with the upgraded forestry track discharge water into the Midlairgs Burn. Some direct loss is anticipated, with the remaining area located downslope of the new track and new drainage ditches, with potential for hydrological flow to be altered.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill within embankments and drains to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
BH19	0.856	Medium	0.3441	0	81	Habitat located partially under the Proposed Scheme footprint, where new embankments and drainage ditches associated with the upgraded forestry access track are proposed. Some direct loss of habitat is likely, with no significant changes to hydrological flow where the drainage ditch discharges downslope of the road into the burn.	Moderate	Moderate	None	Moderate	Moderate
BH22	0.296	Medium	0.0075	0		Habitat located within scheme footprint and downslope of upgraded forestry access tracks, featuring new embankments, drainage ditches and new structure as part of the stream realignment. Some of the habitat is located downslope of new drainage ditches which have the potential to cut off flow.	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill within embankments and drains to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
BH24	0.203	Medium	0.0620	0		Habitat located partially under the Proposed Scheme footprint, where the existing forestry access track is being upgraded and features new	Moderate	Moderate	For GWDTE areas downslope: Use of permeable fill within	Moderate	Moderate

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						embankments and drainage ditches. Some direct loss is anticipated, with ditches along the embankment flow have the potential to cut off flow.			embankments and drains to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.		
BH32	0.452	Medium	0	0		Habitat located 20m south and upslope of the forestry access track upgrade. Small cuttings with new drainage ditches at the top of the cutting is proposed. No impact is anticipated on this habitat.	Negligible	Neutral	None	Negligible	Neutral
BH31	0.407	Medium	0	0		Habitat located 20m upslope of the scheme's LMA. No direct loss of the habitat is anticipated, with negligible changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
BH30	0.027	Medium	0.0275	0		Approximately 90% of habitat lost under scheme's LMA, with approx 25% lost under the scheme's embankment, drainage and potential drawdown from the scheme's cutting. Due to the potential land take upslope, major changes to groundwater is anticipated.	Major	Large	None	Major	Large
BH25	0.064	Medium	0.0539	0	101	Approx 65% of habitat lost under scheme's LMA, with approx 20% lost under the scheme's embankment, drainage and potential drawdown from the scheme's cutting. Area also downslope of the access track. Due to the potential land take upslope, major changes to groundwater is anticipated.	Major	Large	Use of permeable fill in within track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Moderate	Moderate
BH49	0.105	Medium	0	0		Habitat located 60m upslope from the scheme and is 60m outside the cuttings radius of impact. No direct loss is anticipated, with no changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
BH42	0.139	High	0	0		Habitat located 30m upslope from the scheme and is 70m outside the cuttings radius of impact. No direct loss is anticipated, with no changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
BH41	0.055	Medium	0	0		Habitat located 50m upslope from the scheme and is 70m outside the cuttings radius of impact. No direct loss is anticipated, with no changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
A390	0.062	High	0	0		This habitat is located 20m upslope and perpendicular to the upgrade of the forestry track. There will be no direct loss of the habitat and minor changes in groundwater are predicted.	Minor	Slight	None	Minor	Slight
DB_B085	0.286	High	0	0		Habitat located downslope of the upgraded access track and associated drainage. Some changes to subsurface flows downslope of the track may impact this area.	Moderate	Moderate	Use of permeable fill in within track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
DB_A147	0.058	High	0	0		Habitat located 20m parallel from the scheme. No direct loss of the habitat is anticipated, with no changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
DB_C059	0.508	Medium	0	0		Habitat located 145m downslope of the scheme's LMA and 170m downslope of drainage ponds. No direct loss of the habitat is anticipated, with negligible changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
DB_C059	0.032	Medium	0	0		Habitat located 170m downslope of the scheme's LMA and 190m downslope of drainage ponds. No direct loss of the habitat is anticipated, with negligible changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral

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DB_C117	0.017	Very High	0	0		Habitat located 115m downslope of the scheme's LMA and adjacent to drain, that passes beneath the scheme upstream of the habitat. No direct loss of the habitat is anticipated, with negligible changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
DB_J132	0.061	Very High	0	0		Habitat located 230m upslope of the scheme's LMA. No direct loss of the habitat is anticipated, with negligible changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
DB_J050	0.000	Medium	0	0		Habitat located 245m upslope of the scheme's LMA. No direct loss of the habitat is anticipated, with negligible changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
DB_J040	0.033	High	0	0		Habitat located 190m upslope of the scheme's LMA. No direct loss of the habitat is anticipated, with negligible changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
DB_J047	0.046	Medium	0	0		Habitat located 190m upslope of the scheme's LMA. No direct loss of the habitat is anticipated, with negligible changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
DB_X030	0.040	Medium	0	0		Habitat located 180m downslope of the schemes embankments and adjacent to drain that, upstream, passes beneath the scheme. No direct loss of the habitat is anticipated, with negligible changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
DB_X014	0.002	Medium	0	0		Habitat located 240m downslope of the scheme at the base of a small hill/mound. No direct loss of the habitat is anticipated, with negligible changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
DB_X013	0.013	Medium	0	0		Habitat located 240m downslope of the scheme at the base of a small hill/mound. No direct loss of the habitat is anticipated, with negligible changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
DB_X013	0.044	Medium	0	0		Habitat located 115m downslope of the schemes embankments and adjacent to drain that, upstream of the habitat passes beneath the scheme. No direct loss of the habitat is anticipated, with negligible changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
BH15e	0.053	Medium	0	0		Habitat located 20m downslope from the schemes embankments and access tracks and adjacent to Midlairgs Burn. No direct loss of the habitat is anticipated, with subsequent moderate changes in groundwater predicted.	Moderate	Moderate	Use of permeable fill in within track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
DB_C184	0.022	High	0	0		Habitat located 220m downslope from the schemes embankments. No direct loss of the habitat is anticipated, with negligible changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
DB_B176	0.011	High	0	0		Habitat located 215m downslope from the schemes embankments and is separated from the scheme from a drainage ditch. No direct loss of the habitat is anticipated, with negligible changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
JM001	0.227	Medium	0.0321	0		Habitat located within scheme footprint and downslope and adjacent to the proposed access track (General Wade's Military Road). Habitat is also adjacent to a tributary of Allt Creag Bheithin. Direct loss of approximately 1/5 of the habitat is anticipated, with subsequent moderate changes in groundwater predicted.	Moderate	Moderate	Use of permeable fill in within track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
B099e	0.729	Very High	0	0		Habitat located 155m downslope of the scheme's embankments and upslope of Allt Creag Bheithin. There will be no direct loss of habitat, with no measurable change in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral

Polygon ID	Area (ha)	Sensitivity	Direct loss under Proposed Scheme (ha)	Indirect loss from Cutting (ha)	Cutting No	Description of Impact	Potential Magnitude	Potential Significance	Proposed Mitigation	Residual Effect Magnitude	Residual Effect Significance
JM012	0.417	High	0	0		Habitat located 75m upslope from the scheme and is 100m outside the cuttings radius of impact. No direct loss is anticipated, with no changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
JM011	0.123	Very High	0	0		Habitat located 115m downslope from the scheme's cuttings and is adjacent to General Wade's Military Road and Midlairgs Burn. The habitat is approximately 105m downslope of the nearest extent of a cuttings radius of impact. No direct loss of the habitat is anticipated, with subsequent minor changes in groundwater predicted.	Minor	Moderate	Use of permeable fill in within track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Moderate
JM013	0.435	Medium	0	0		Habitat located 30m upslope from the scheme. No direct loss is anticipated, with no changes in groundwater predicted.	Minor	Slight	None	Minor	Slight
JM025	0.339	Medium	0	0		Habitat located downslope from and adjacent to B9154. No direct loss is anticipated, with minor changes in groundwater predicted.	Minor	Slight	Use of permeable fill in within track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Negligible	Neutral
JM021	2.161	High	0	0		Habitat located 90m upslope from the scheme, with no works anticipated within the habitat's catchment. No direct loss is anticipated, with no changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
JM029	0.058	High	0	0		Habitat located 80m downslope from the scheme, with no works anticipated within the habitat's catchment. No direct loss is anticipated, with no changes in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
JM060	0.252	Medium	0	0		Habitat located 115m south and upslope of the proposed bus turning circle south of Tomatin. Given the upslope location of this habitat, no impact is likely.	Negligible	Neutral	None	Negligible	Neutral
JM024	0.999	Medium	0	0		Habitat located downslope from and adjacent to B9154. No direct loss is anticipated, with minor changes in groundwater predicted.	Minor	Slight	Use of permeable fill in within track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Negligible	Neutral
JM059	0.387	Medium	0	0		Habitat located 30m parallel of a proposed access track, containing the banks of the Allt Cosach. As there are existing drainage ditches in places adjacent to the C-road downslope of the habitat, potential groundwater flows in the habitat's catchment area are already modified. No direct loss is anticipated, with no measurable change in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
JJ017	0.216	High	0	0		Habitat located 190m downslope from the scheme and associated access tracks. No direct loss is anticipated, with negligible changes in groundwater predicted.	Negligible	Neutral	Use of permeable fill in within track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Negligible	Neutral
JM026	0.660	Very High	0.0965	0		There is a small direct loss of habitat along the B9154 where the existing road will be upgraded, with a relatively small embankment proposed. A small proportion of the area will be permanently removed. Given the	Moderate	Large	Use of permeable fill in within track to maintain flow, and inclusion of cross-formation drains. Included in baseline	Minor	Moderate

Polygon ID	Area (ha)	Sensitivity	Direct loss under Proposed Scheme (ha)	Indirect loss from Cutting (ha)	Cutting No	Description of Impact	Potential Magnitude	Potential Significance	Proposed Mitigation	Residual Effect Magnitude	Residual Effect Significance
						presence of the existing road, no measureable changes to groundwater flow are anticipated.			pre-construction monitoring to determine groundwater dependency.		
JM027	0.292	High	0	0		Habitat located 5m downslope from B9154 and the Highland Railway Mainline. No direct loss is anticipated, with minor changes in groundwater predicted.	Minor	Moderate	Use of permeable fill in within track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Negligible	Neutral
JM060	3.334	Medium	0.2217	0		Habitat located upslope and adjacent to access track and approximately 1/6 of area lost under footprint of the scheme. Moderate impact considered likely, due to habitat loss being parallel and downslope of the majority of the area.	Minor	Slight	None	Minor	Slight
CC017	0.018	High	0	0		Habitat located 70m downslope of the scheme, adjacent to the Midlairgs Burn. As there are existing drainage ditches in places adjacent forestry tracks upslope of the habitat, potential groundwater flows in the habitat's catchment area are already modified. No direct loss is anticipated, with no change in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
CC014	0.254	High	0	0		Habitat located 15m upslope from access track and cuttings. No direct loss is anticipated, with negligible change to groundwater level predicted.	Negligible	Neutral	None	Negligible	Neutral
CC013	0.120	Medium	0.0262	0		Habitat located within scheme footprint, as well as upslope and adjacent to access track and approximately 1/4 of area lost under footprint of the scheme. Limited further impact considered likely, as surface and groundwater flows in the remaining area assumed to run parallel to the proposed forestry track.	Moderate	Moderate	None	Moderate	Moderate
CC009	0.259	Medium	0.0741	0		Habitat located within LMA and upslope and adjacent to access track and approximately 1/3 of area lost under footprint of the scheme. Limited further impact considered likely, as surface and groundwater flows in the remaining area assumed to run parallel to the proposed forestry track.	Moderate	Moderate	None	Moderate	Moderate
CC002	0.311	Medium	0.0828	0		Habitat located within LMA and upslope and adjacent to access track and approximately 1/3 of area lost under footprint of the scheme. Limited further impact considered likely, as surface and groundwater flows in the remaining area assumed to run parallel to the proposed forestry track.	Moderate	Moderate	None	Moderate	Moderate
CC004	0.194	Medium	0	0		Habitat located 35m upslope of access track, at the headwaters of Caochan na h-Earbaige. No direct loss is anticipated, with no change in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
CC038	0.627	Very High	0.001	0		Habitat located partially within LMA, as well as downslope from B9154, adjacent to the Allt Creag Bheithin. Small area of direct loss is anticipated, with minor changes in groundwater predicted.	Minor	Moderate	Use of permeable fill in within track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Negligible	Neutral
CC037	1.650	High	0	0		Habitat located downslope and adjacent to the proposed access track between the A9 and B9154. No direct loss is anticipated, with minor changes in groundwater predicted.	Minor	Slight	Use of permeable fill in within track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Negligible	Neutral

Polygon ID	Area (ha)	Sensitivity	Direct loss under Proposed Scheme (ha)	Indirect loss from Cutting (ha)	Cutting No	Description of Impact	Potential Magnitude	Potential Significance	Proposed Mitigation	Residual Effect Magnitude	Residual Effect Significance
CC034	3.271	High	0	0		Habitat located 10m downslope of a proposed access track between the A9 and B9154, adjacent to the Allt Creag Bheithin. No direct loss is anticipated, with a limited change in groundwater predicted.	Minor	Slight	Use of permeable fill in within track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Negligible	Neutral
CC031	0.126	High	0	0		Habitat located 220m downslope of the scheme's embankments and upslope of Allt Creag Bheithin. There will be no direct loss of habitat, with no measurable change in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
CC033	0.120	Medium	0	0		Habitat located 270m downslope of the scheme's embankments and upslope of Allt Creag Bheithin. There will be no direct loss of habitat, with no measurable change in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
CC032	0.647	Medium	0	0		Habitat located 180m downslope of the scheme's embankments and upslope of Allt Creag Bheithin. There will be no direct loss of habitat, with no measurable change in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
CC086	0.326	High	0	0		Habitat located 60m south-east and upslope of the Proposed Scheme, where the bus turning circle south of Tomatin is located. Given the upslope location of the habitat no impact is predicted.	Negligible	Neutral	None	Negligible	Neutral
CC081	0.277	High	0	0		Habitat located 20m downslope of a proposed access track, adjacent to the Allt Cosach. As there are existing drainage ditches in places adjacent to the C-road upslope of the habitat, potential groundwater flows in the habitat's catchment area are already modified. No direct loss is anticipated, with no measurable change in groundwater predicted.	Negligible	Neutral	None	Negligible	Neutral
CC010	0.038	High	0.0146	0		Habitat located immediately adjacent to existing forestry track, with some direct loss as a result of the Proposed Scheme Footprint. The remainder of the area is located upslope of the existing forestry track, with no indirect impacts anticipated.	Moderate	Moderate	None	Moderate	Moderate
JM004	0.442	Medium	0.0813	0		Habitat located partially within the Proposed Scheme footprint, where the existing forestry track is being upgraded. Given the upslope location of the habitat and minimal works, only direct loss is anticipated.	Moderate	Moderate	None	Moderate	Moderate
CC030	0.529	Medium	0	0		Habitat is located immediately downslope of existing informal access track, which is to be upgraded for SuDs access. The track will be drained by ditches and/or grassed channels/swales, which have the potential to cut off overland surface flow to the habitat	Moderate	Moderate	Use of permeable fill in within track to maintain flow, and inclusion of cross-formation drains. Included in baseline pre-construction monitoring to determine groundwater dependency.	Minor	Slight
CC043	0.156	Medium	0	0		Habitat located approx 45m from terminating end of proposed access track, on opposite side of B9154. No impact anticipated.	Negligible	Neutral	None	Negligible	Neutral
J177	0.616	Medium	0.3890	0		Approx 1/3 of habitat lost under footprint of the scheme. Unlikely to be further impact as the Midlairgs Burn forms a hydrological barrier between the scheme and part of the habitat, and surface and groundwater flows in the remaining area would run parallel to the proposed forestry track and be unaffected.	Moderate	Moderate	None	Moderate	Moderate
J177	0.052	Medium	0.0525	0		Complete loss of this habitat under the footprint of the scheme	Major	Large	None	Major	Large

6.2.5. Following this assessment, a total of 140 habitats (51.7 Ha) will not be impacted. These habitats are located outside of the Proposed Scheme footprint, either upslope of the scheme, where there is no hydrological or topographical connection between the habitat and the Proposed Scheme, or where the intervening distance is such that there is no impact anticipated.

Direct Loss

6.2.6. A total of 145 habitats (21.9 Ha) will be partially or completely lost under the footprint of the Proposed Scheme (Land Made Available (LMA) boundary). This includes 48 habitats (7.7 Ha) where there is a loss of over 95% of the habitat, 30 habitats (4.7 Ha) where 50%-95% of the habitat is lost, 40 habitats (7.6 Ha) where there is a loss of 15%-50% and 27 habitats (1.9 Ha) which feature less than 15% loss of habitat.

6.2.7. The loss of habitat calculated is within the LMA boundary. This includes the permanent earthworks of the Proposed Scheme, as well as temporary construction areas which may be used for temporary haul routes, construction SuDs, storage areas etc. The GWDTEs located within temporary works areas will be cleared for construction works, but the majority of these areas will not be impacted by long term changes to groundwater flows (with the exception of those which also lie within the drawdown zones of the permanent cuttings, as discussed below). The groundwater table is likely to remain unchanged over the long term, therefore although the GWDTE habitat will be lost in the short term, the ground conditions conducive to GWDTE formation will remain, with the possibility of some form of GWDTE habitat re-establishing in the long term. Therefore the total area of GWDTEs lost under the footprint is a conservative estimate, given some of these areas are likely to return in the long term.

6.2.8. Also, the area of GWDTE loss includes both dominant and sub-dominant habitats. A number of these mosaics will feature non-groundwater dependent habitats, which may result in an over-estimate of true GWDTE loss.

Indirect loss from cuttings

6.2.9. A number of cuttings are required as part of the Proposed Scheme design, some of which intercept groundwater. Dewatering within cuttings can alter the groundwater flow in the surrounding area (zone of influence) with long term changes to groundwater levels.

6.2.10. Of the 149 cuttings associated with the Proposed Scheme 30 have been identified as intercepting the groundwater table, primarily at the deeper cutting locations. These include new cuttings required at Tomatin GSJ, Dalmagarry Quarry, north of the Moy Rail Bridge, the Lynebeg underpass, along the B9154 west of Moy, the northbound carriageway west of Lynebeg and the forestry windfarm access track upgrade. The depth of these cuttings vary from approximately 0.3m to 14.1m depth (at Dalmagarry Quarry). These are detailed within Section 5 of this report.

6.2.11. A total of 25 habitats (9.6 Ha) are located within the zone of influence of cuttings 7, 43, 51, 69, 81, 87, 95 and 101, all of which intercept groundwater. However, the majority of these GWDTEs will be lost directly within the LMA boundary. As the changes to groundwater levels in these areas are likely to be permanent, any habitats that are located within these areas which may be used for temporary works are not likely to be re-established as they could not be supported by groundwater in the long term.

6.2.12. Of the 25 habitats, eight (A250, A252, A061, C183, C184 (two polygons), C185 and C186) are located within groundwater drawdown zones of influence which extend outside of the LMA, resulting in an additional permanent loss of 0.42 Ha. The zones of

influence relate to cuttings 7, 69 and 95. This results in a very small percentage of GWDTEs (0.3%) impacted solely by groundwater changes.

Indirect loss to habitats downslope

6.2.13. A total of 75 habitats are located downslope of the Proposed Scheme and may be impacted indirectly by changes to subsurface flows. Many of these habitats also lie within the LMA and partially under the permanent earthworks footprint, and so will suffer from direct loss in the both the short and long term. Given the combined effects of these impacts it is not possible to quantify the areas associated solely with indirect loss. However the impacts have been assessed qualitatively, and the potential area impacted can conservatively be assumed to be the GWDTE area downslope of the permanent earthworks.

Summary of impacts

6.2.14. An overall impact magnitude and significance has been determined for each GWDTE habitat assessed, taking into consideration each of the impact types discussed above.

6.2.15. A summary of the potential GWDTE impacts before any mitigation is provided in Table A6.5 below, with significant impacts highlighted in red.

Table A6.5: Summary of Potential Impacts on Individual GWDTEs

Groundwater Dependency	Sensitivity	Number of polygons	Area Loss (ha)	% of Total Area of Baseline GWDTE	% of Overall Study Area, 250m Buffer	Potential Impact Magnitude	Potential Significance on Individual GWDTE
High	Very High	6	1.33	0.94%	0.13%	Major	Very Large
		6	1.58	1.12%	0.16%	Moderate	Large
		3	0.16	0.11%	0.02%	Minor	Moderate
		10	0.00	-	-	Negligible	Neutral
	Subtotal	25	3.07	2.17%	0.31%	-	-
Moderate	High	1	0.10	0.07%	0.01%	Major	Very Large
		31	5.61	3.97%	0.57%	Major	Large
		9	1.11	0.78%	0.11%	Moderate	Large
		20	1.77	1.25%	0.18%	Moderate	Moderate
		1	0.00	-	-	Minor	Moderate
		12	0.30	0.21%	0.03%	Minor	Slight
		58	0.00	-	-	Negligible	Neutral
	Subtotal	132	8.89	6.28%	0.90%	-	-
Low	Medium	30	3.83	2.71%	0.39%	Major	Large
		38	6.13	4.33%	0.62%	Moderate	Moderate
		11	0.34	0.24%	0.03%	Minor	Slight
		49	0.00	-	-	Negligible	Neutral
	Subtotal	128	10.30	7.28%	1.04%	-	-
Various	Various	145	21.62	15.28%	2.19%	Various	Individual GWDTE Areas with Very Large / Large / Moderate Significance Values

6.2.16. The baseline conditions and potential effects of the Proposed Scheme on individual GWDTE polygons are provided in Tables A6.2 to A6.4, with significance values for individual polygons summarised in Table A6.5. Table A6.5 identifies that there are 145 GWDTE polygons, with an aggregated area of 21.62 hectares, with direct and indirect losses that each have a potentially significant effect (i.e. Very Large, Large or Moderate significance values). This equates to 15.3% of the total area of baseline GWDTE identified and 2.2% of the overall study area.

6.2.17. Individual GWDTE locations have been assessed and due to local characteristics wide-ranging outcomes have been collated, with sensitivity values of Medium-Very High, magnitude values of Negligible-Major and significance outcomes ranging from Neutral-Very Large.

6.2.18. The allocation of sensitivity and importance of GWDTEs has been a key consideration, with individual polygons evaluated on the basis of potential groundwater dependency, enabling design input and monitoring and mitigation to target appropriate locations. When considering the overall GWDTE effect in an EIA context, it would not be appropriate to consider an undesignated GWDTE area, which may represent a widespread vegetation community in Scotland, to hold equivalent importance to a receptor with an international designation, such as a SAC, as there are is a clear differential in status, leading to design influence and degree of protection that should be applied. Overall, GWDTE at the Proposed Scheme are therefore considered of High importance.

6.2.19. As an overall assessment outcome, GWDTE receptors have High importance, with the potential impact of the Proposed Scheme of Moderate magnitude and Moderate Adverse significance, taking into account the relatively small areas of GWDTE where significant effects are anticipated.

6.3. Potential Mitigation

6.3.1. A number of mitigation measures are proposed for reducing the impact on GWDTEs within the Proposed Scheme study area. No mitigation measures are proposed for GWDTEs lost under the permanent earthworks of the Proposed Scheme.

6.3.2. However, a number of areas within the LMA for temporary works are included within the Landscape and Ecological Mitigation Plans, and it is anticipated that this restoration works will encourage the re-establishment of GWDTES in areas where the groundwater levels are unaffected by the permanent works.

6.3.3. As part of the Detailed Design process, pre-construction groundwater monitoring will be carried out at a representative sample of high and moderate groundwater dependency GWDTEs to determine whether they are true GWDTEs. This will comprise a minimum of ten samples over a 6 month period, with at least five taken during the summer period.

6.3.4. During construction of the Proposed Scheme, where GWDTEs will be affected by groundwater drawdown in the vicinity of cuttings, any groundwater entering cuttings will be directed to the down gradient side and allowed to infiltrate. Where possible the location and frequency of these discharges will be designed to replicate the natural groundwater flow as closely as possible.

6.3.5. Where GWDTEs are located downslope of proposed road embankments, permeable fill material will be used in the embankment construction wherever possible, to maintain groundwater flows. The precise design mitigation for each GWDTE identified downslope will be considered during pre-construction phase.

6.3.1. Those GWDTEs considered to be at risk of impact will be monitored prior to and after construction to determine the level of impact from groundwater drawdown. All GWDTEs where cutting groundwater drawdown impacts are anticipated will be monitored, while a representative sample of downslope GWDTEs potentially impacted will be included within the monitoring locations.

6.3.2. Monitoring will involve both groundwater level readings and repeated NVC surveys. The groundwater monitoring will be carried out in accordance with SEPA guidance, and may feature hand-driven groundwater monitoring wells, with a minimum of one up gradient location and two down gradient locations of the proposed infrastructure where GWDTEs may be impacted. Pre and post construction requirements include:

- Pre-construction monitoring – a minimum of ten samples of groundwater level over a minimum of 6 months prior to construction, including at least five in the summer period.
- Post-construction monitoring – a minimum of ten measurements of groundwater level per year, conducted for a minimum of three years until it is demonstrated the receptors are not impacted.

6.3.3. Monitoring during the construction phase will also be considered where required to identify potential adverse impacts early on. All monitoring locations will be agreed with SEPA at the pre-construction stage.

6.3.4. The potential mitigation proposed for individual GWDTE habitats is summarised in Table A6.6 below.

Table A6.6: Summary of Mitigation Requirements for Individual GWDTEs

Mitigation Item	GWDTE Polygon ID
Cutting drainage redirected/ dispersed downhill	C183, C184 (two polygons), C185, C186
Permeable embankment fill	A381, A323, A319, A277, B081 B085, B090, B093, B100, B107, B179, B180, B040, B157, X041, X049, X056, X015, X013, X011, C058, C059, C046, C043, C092, C091, C094, C101 C148, C147, C144, C188, C140, C017, C033, C184 (two polygons), C183, C185, C163, C179, C186, BH05, BH06, BH15, BH24, BH25, DB_B085, BH15e, JM001, JM011, JM025, JM24, JJ017, JM026, JM027, CC038, CC037, CC034, CC030
Monitoring	A381, A323, A319, B090, B093, B100, B107, C148, C147, C144, C188, C140, C017, C033, C163, C179, BH05, BH06, BH15, BH22, BH24, BH25, DB_B085, BH15e, JM001, JM011, JM025, JM024, JJ017, JM026, JM027, CC038, CC037, CC034, CC030

6.4. Residual Effects

6.4.1. The residual impact on GWDTEs, including the number of habitats and area impacted by the Proposed Scheme, are summarised in Table A6.7.

Table A6.7: Summary of Residual Impacts on Individual GWDTEs

Groundwater Dependency	Sensitivity	Number of polygons	Area Loss (ha)	% of Total Area of Baseline GWDTE	% of Overall Study Area, 250m Buffer	Potential Impact Magnitude	Potential Significance on Individual GWDTE
High	Very High	5	1.19	0.84%	0.12%	Major	Very Large
		5	1.66	1.17%	0.17%	Moderate	Large
		4	0.26	0.18%	0.03%	Minor	Moderate
		11	0.00	-	-	Negligible	Neutral
	Subtotal	25	3.11	2.19%	0.32%	-	-
Moderate	High	1	0.10	0.07%	0.01%	Major	Very Large
		30	5.47	3.87%	0.55%	Major	Large
		5	1.04	0.73%	0.10%	Moderate	Large
		11	1.66	1.17%	0.17%	Moderate	Moderate
		0	0.00	-	-	Minor	Moderate
		23	0.57	0.40%	0.06%	Minor	Slight
		62	0.05	0.04%	0.01%	Negligible	Neutral
	Subtotal	132	10.18	7.21%	0.90%	-	-
Low	Medium	29	3.78	2.67%	0.38%	Major	Large
		28	4.72	3.34%	0.48%	Moderate	Moderate
		20	1.80	1.27%	0.18%	Minor	Slight
		51	0.00	-	-	Negligible	Neutral
	Subtotal	128	10.30	7.28%	1.04%	-	-
Various	Various	118	19.88	14.04%	2.01%	Various	Individual GWDTE Areas with Very Large / Large / Moderate Significance Values

6.4.2. Table A6.8 identifies that there are 118 GWDTE polygons, with an aggregated area of 19.88 hectares, with direct and indirect losses that each have a potentially significant effect (i.e. Very Large, Large or Moderate significance values). This equates to 14.0% of the total area of baseline GWDTE identified and 2.0% of the overall study area.

6.4.3. As per the pre-mitigation stage, individual GWDTE locations have been assessed and wide-ranging outcomes have been collated, with sensitivity values of Medium-Very High, magnitude values of Negligible-Major and significance outcomes ranging from Neutral-Very Large.

6.4.4. There is uncertainty in relation to the degree of groundwater influence in local soil conditions that are leading to the specified GWDTE vegetation communities recorded in the NVC survey, with the above individual outcomes following a precautionary approach, due to the limited data available. Given local geology and meteorological conditions, the combination of surface water flow and direct rainfall contribution to these locations may be substantial, thereby reducing dependency on groundwater. Planned monitoring of baseline groundwater conditions and during the construction of the Proposed Scheme will result in a better understanding of local groundwater characteristics, potentially providing evidence of reduced concern regarding local groundwater influence or enable consideration of further detailed design adaptations to reduce adverse effect.

6.4.5. Some individual GWDTE polygon outcomes are influenced by proposed temporary works, which would be reasonably expected to be moderated as groundwater would be anticipated to return to former conditions in a relatively short timeframe. Other than locations where permanent infrastructure shall be installed, much of the GWDTE vegetation evaluated as being removed would be expected to recover, taking account of mitigation measures to maintain groundwater conditions and encouraging appropriate re-vegetation. Specific issues in relation to habitat loss are discussed in Chapter 12: Ecology and Nature Conservation.

6.4.6. The outcomes for individual GWDTE polygons were evaluated using a purposefully precautionary approach, in order to establish constraints during the design process, propose specific mitigation measures to limit adverse effect on groundwater conditions and identify groundwater monitoring locations. However, it is also important to ensure that the overall effects on GWDTE are appropriately assessed and proportionate to determine residual significance in the context of the Proposed Scheme (including other discipline significance outcomes), scale of groundwater bodies and DMRB HD45/09 Guidance.

6.4.7. Notwithstanding the recognition that a number of individual GWDTE locations may have a localised significant impact, the overall importance of GWDTE for the Proposed Scheme is evaluated as High, with a residual effect magnitude of Minor Adverse, resulting in a Slight Adverse residual significance.

7. References

[i] CIRIA C515 (2000). Groundwater Control – design and practise. Construction Industry Research and Information Association, CIRIA Publication C515.
[ii] SEPA. (2013). Regulator Method (WAT-RM-11) Licencing Groundwater Abstractions including Dewatering. Version v5 June 2013.
[iii] SEPA. (2015). Guidance on Assessing the Impacts of Windfarm Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems. Land Use Planning System, SEPA Guidance Note 31. Version 1.
[iv] Transport Scotland. (2015). A9 Dualling Tomatin to Moy Advance Works, Invernesshire, Highland. Report on Ground Investigation. Final Report.
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Annex A. NVC Survey results

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
Z003-	Je	100		0		0		0		0		0		0		0
Z005-	M23b	50	U4a	43	M6c	3	H12a	2	W19	2		0		0		0
Z007-	Je	95	U4	3	U5	1	W19	1		0		0		0		0
Z011-	U4a	80	Je	15	U5	5		0		0		0		0		0
Z014-	Je	75	U4a	21	U5a	4		0		0		0		0		0
Z021-	M6c	90	Je	10		0		0		0		0		0		0
Z025-	H12c	65	U4	10	U6d	10	W19	10	U5	5		0		0		0
Z029-	U6d	100		0		0		0		0		0		0		0
Z030-	Je	50	U6d	48	U4a	2		0		0		0		0		0
Z041-	M23b	90	Je	7	U4a	3		0		0		0		0		0
Z043-	Je	100		0		0		0		0		0		0		0
Z046-	Je	65	U4	25	U5	10		0		0		0		0		0
Z049-	Je	98	U5	2		0		0		0		0		0		0
Z051-	M23b	70	Je	20	M6c	9	U4	1		0		0		0		0
Z067-	MG10a	100		0		0		0		0		0		0		0
Z076-	M6c	100		0		0		0		0		0		0		0
Z079-	Je	80	U4a	20		0		0		0		0		0		0
A029-	H12b	19	U4a	19	U5a	19	MG9	19	W17b	9	W17c	9	M6c	5	W11c	1
A036-	H12b	24	W11d	24	H21a	23	W17b	12	W17c	12	W4b	5		0		0
A038-	U4a	25	MG5	25	BG	25	H12b	10	MG10	10	W23	5		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
W002-	H12b	80	M6c	20		0		0		0		0		0		0
W004-	M6c	100		0		0		0		0		0		0		0
W005-	U5d	50	M6c	50		0		0		0		0		0		0
W012-	H12b	50	U4d	40	M6c	10		0		0		0		0		0
W014-	H12b	70	M6c	30		0		0		0		0		0		0
W015-	M16d	50	M6c	45	M19	5		0		0		0		0		0
A028-	W17b	50	H21a	45	U16c	5		0		0		0		0		0
A388	H9-12	99	M6c	1		0		0		0		0		0		0
A377	CF > Je	55	CF > H9-12	35	MG9	10		0		0		0		0		0
A371	Je	50	U4a	50		0		0		0		0		0		0
A382	M6c	50	M4	50		0		0		0		0		0		0
A381	CP	50	M6c	24	Je	24	M20	1	U4a	1		0		0		0
A363	U4a	58	U4b	20	H9-12	10	BG	10	Je	2		0		0		0
A373	CF > M19	50	CF > Je	50		0		0		0		0		0		0
A366	Je	100		0		0		0		0		0		0		0
A345	M15b	100		0		0		0		0		0		0		0
A323	MG9	35	M6c	35	MG10a	10	Je	10	M4	5	U5a	5		0		0
A319	M19a	60	M25a	25	H9-12	10	U5a	5		0		0		0		0
A322	CF > M19	60	CF > Je	38	M6c	2		0		0		0		0		0
A332	U4b	45	MG9	45	MG10a	5	H9-12	5		0		0		0		0
A328	W4b	100		0		0		0		0		0		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
A326	W7c	100		0		0		0		0		0		0		0
A327	M15b	100		0		0		0		0		0		0		0
A331	MG9	75	M6c	15	U4b	10		0		0		0		0		0
A330	MG9	75	U4	25		0		0		0		0		0		0
A303	W18	60	H9-12	30	M19a	6	M25a	4		0		0		0		0
A294	MG10a	50	U4b	50		0		0		0		0		0		0
A295	U4b	50	U4a	39	H9-12	5	MG10a	5	U5a	1		0		0		0
A231	M6c	89	M6d	10	M4	1		0		0		0		0		0
A230	H9-12	30	U4a	25	U4b	25	U5a	10	Je	10		0		0		0
A225	W4b	50	W17b	50		0		0		0		0		0		0
A223	H12b	60	U5a	15	U5b	15	M15a	5	M6c	4	M6a	1		0		0
A227	M25a	100		0		0		0		0		0		0		0
A236	M6c	50	U5b	50		0		0		0		0		0		0
A217	M6c	20	M15d	20	M25a	20	H21a	20	U5a	20		0		0		0
A234	U4a	25	U5a	25	U5b	25	Je	24	H9-12	1		0		0		0
A238	M15a	95	U5b	3	M6c	2		0		0		0		0		0
A393	MG10a	100		0		0		0		0		0		0		0
A394	W17	40	H9-12	15	U4b	15	M6c	10	MG9	10	MG10a	10		0		0
A291	W4b	50	W17c	50		0		0		0		0		0		0
A248	M6c	100		0		0		0		0		0		0		0
A260	H9-12	25	M19a	20	M6c	15	U5b	15	Je	15	M20	10		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
A198	U4b	48	H9-12	20	MG10a	10	BG	10	U5a	5	Je	5	RW	2		0
A250	M19a	80	M15c	10	M15d	10		0		0		0		0		0
A252	U5b	70	M15a	20	M15b	10		0		0		0		0		0
A259	M6a	60	M6d	20	M4	10	M6c	10		0		0		0		0
A258	M6c	90	M4	10		0		0		0		0		0		0
A254	W17b	50	M19a	49	Je	1		0		0		0		0		0
A274	U5b	55	Je	25	M6c	10	U4a	10		0		0		0		0
A271	Je	55	H9-12	20	U4b	15	U5a	10		0		0		0		0
A204	U5a	45	U4b	35	Je	20		0		0		0		0		0
A175	H9-12	40	RW	30	U4b	10	U5a	10	Je	10		0		0		0
A177	M19a	85	H9-12	10	Je	5		0		0		0		0		0
A162	M17a	60	M19a	34	U6a	5	M2	1		0		0		0		0
A163	M16d	85	M19a	5	H9-12	5	H21a	5		0		0		0		0
A203	M6c	40	MG10a	40	M23b	10	M23a	5	Je	5		0		0		0
A201	M6c	60	M4	40		0		0		0		0		0		0
A161	U4b	45	MG10a	45	H9-12	10		0		0		0		0		0
A281	M19a	55	H21a	25	Je	20		0		0		0		0		0
A277	M6c	70	Je	30		0		0		0		0		0		0
A199	H9-12	75	M19a	10	Je	8	H21a	5	U4b	2		0		0		0
A263	Je	100		0		0		0		0		0		0		0
A149	U4b	40	U5a	30	U6d	30		0		0		0		0		0
A152	M6c	100		0		0		0		0		0		0		0
A154	U4b	50	U5a	30	U6d	10	Je	10		0		0		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
A151	Je	100		0		0		0		0		0		0		0
A150	U4b	65	U6d	25	Je	10		0		0		0		0		0
A147	U4a	40	Je	35	U5a	15	U4b	10		0		0		0		0
A147	U4a	40	Je	35	U5a	15	U4b	10		0		0		0		0
A145	M15b	39	M15d	39	H9-12	20	M19a	2		0		0		0		0
A138	H9-12	40	M15b	20	M16d	20	M15a	10	M15c	10		0		0		0
A156	H9-12	50	M16d	50		0		0		0		0		0		0
A130	M19a	58	H21a	20	M15b	10	M17b	10	M15a	2		0		0		0
A129	M17b	80	M15a	10	M15b	10		0		0		0		0		0
A132	H12b	60	M16d	30	H16	10		0		0		0		0		0
A132	H12b	60	M16d	30	H16	10		0		0		0		0		0
A127	U5a	35	H9-12	30	Je	30	U4a	5		0		0		0		0
A122	M6c	100		0		0		0		0		0		0		0
A405	M6c	90	M6a	10		0		0		0		0		0		0
A107	H9-12	40	W4	30	U4a	20	M6c	10		0		0		0		0
A404	U4a	60	H9-12	20	U6	10	U4b	5	U5a	5		0		0		0
A110	M6c	100		0		0		0		0		0		0		0
A111	U4a	59	U6d	20	U5a	10	Je	10	H18a	1		0		0		0
A112	H21a	70	M15a	30		0		0		0		0		0		0
A116	H12b	53	H21a	22	M15b	20	M17	2	M10a	1	M15a	1	Je	1		0
A115	H12b	69	W19	20	H18a	10	M15a	1		0		0		0		0
A114	H12b	78	H18a	10	H21a	10	M15a	1	U5a	1		0		0		0
A100	M6c	85	M20	10	U5a	5		0		0		0		0		0
A097	U5a	78	U4a	10	H12c	10	M16d	2		0		0		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
A095	H9-12	50	M16d	50		0		0		0		0		0		0
A103	U4a	45	U4b	45	Je	10		0		0		0		0		0
A102	U4a	45	U4b	45	MG10a	10		0		0		0		0		0
A102	U4a	45	U4b	45	MG10a	10		0		0		0		0		0
A099	U6d	38	Je	37	U4b	15	U5a	10		0		0		0		0
A410	W11	50	W4	25	W7	25		0		0		0		0		0
A406	M15b	50	H9-12	50		0		0		0		0		0		0
A404	U4a	60	H9-12	20	U6	10	U4b	5	U5a	5		0		0		0
A401	U4a	35	M15d	30	M6c	25	H9-12	10		0		0		0		0
A108	U4b	50	MG10a	50		0		0		0		0		0		0
A118	H12b	40	M16d	28	M15b	20	H16	10	H21a	2		0		0		0
A118	H12b	40	M16d	28	M15b	20	H16	10	H21a	2		0		0		0
A099	U6d	38	Je	37	U4b	15	U5a	10		0		0		0		0
A091	H9	29	M16d	29	H9-12	20	U5a	10	Je	10	M19a	2		0		0
A088	W4c	100		0		0		0		0		0		0		0
A096	U4b	85	MG10a	15		0		0		0		0		0		0
A399	U4b	60	MG10a	40		0		0		0		0		0		0
A397	M6a	49	M6c	49	M25a	2		0		0		0		0		0
A087	U4b	50	MG9	50		0		0		0		0		0		0
A082	W7a	100		0		0		0		0		0		0		0
A077	Je	100		0		0		0		0		0		0		0
A015	MG10a	100		0		0		0		0		0		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
A008	W6	100		0		0		0		0		0		0		0
A026	U4a	90	MG10a	10		0		0		0		0		0		0
A029	U4b	40	MG10a	30	U5a	20	U6	10		0		0		0		0
A021	H12a	60	H21a	10	M15b	10	U5a	10	U6	10		0		0		0
A073	Je	100		0		0		0		0		0		0		0
A066	MG10a	80	U4b	15	MG1	5		0		0		0		0		0
A070	U4b	58	OV25	40	MG10a	2		0		0		0		0		0
A064	U4b	55	U4a	10	U5a	10	MG1	10	MG10a	10	Je	5		0		0
A051	MG10a	100		0		0		0		0		0		0		0
A054	M6c	100		0		0		0		0		0		0		0
A042	W11d	90	W7a	10		0		0		0		0		0		0
A048	Je	100		0		0		0		0		0		0		0
A047	M6c	100		0		0		0		0		0		0		0
A402	U4a	45	U4b	45	MG10a	10		0		0		0		0		0
A284	M6c	50	U5a	25	Je	25		0		0		0		0		0
A233	M19a	98	M6d	2		0		0		0		0		0		0
A124	M6c	50	M23b	50		0		0		0		0		0		0
A119	M6c	100		0		0		0		0		0		0		0
A061	MG10a	100		0		0		0		0		0		0		0
A233	M19a	98	M6d	2		0		0		0		0		0		0
B005	H12a	80	M6c	20		0		0		0		0		0		0
B055	M15b	100		0		0		0		0		0		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
B056	M15b	100		0		0		0		0		0		0		0
B058	M15b	50	MG10a	25	U4	20	MG9	5		0		0		0		0
B061	M15b	90	H12	10		0		0		0		0		0		0
B066	H12	90	M15b	10		0		0		0		0		0		0
B064	M6c	85	MG9	15		0		0		0		0		0		0
B021	H12a	85	M15b	15		0		0		0		0		0		0
B020	M25a	100		0		0		0		0		0		0		0
B006	H12a	85	M25a	14	M20	1		0		0		0		0		0
B013	H12	93	U4	4	M25	2	M20	1		0		0		0		0
B070	M25a	60	M20	37	U5a	3		0		0		0		0		0
B079	M25b	60	U5a	40		0		0		0		0		0		0
B081	M6c	100		0		0		0		0		0		0		0
B076	MG9	100		0		0		0		0		0		0		0
B085	Je	55	U4	45		0		0		0		0		0		0
B090	M6c	60	Je	40		0		0		0		0		0		0
B093	M25	100		0		0		0		0		0		0		0
B099	M6c	100		0		0		0		0		0		0		0
B100	Je	100		0		0		0		0		0		0		0
B107	M23b	50	M6c	35	M20	7	M6d	5	M25	3		0		0		0
B106	Je	97	MG9	3		0		0		0		0		0		0
B105	MG9	95	U4	5		0		0		0		0		0		0
B189	U4	96	Je	4		0		0		0		0		0		0
B185	U4b	90	MG10a	6	W23	4		0		0		0		0		0
B183	MG9	60	MG10a	40		0		0		0		0		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
B179	MG10a	100		0		0		0		0		0		0		0
B180	MG10a	100		0		0		0		0		0		0		0
B149	U5b	60	MG10a	25	U4	15		0		0		0		0		0
B155	H12	90	M15c	8	U5	2		0		0		0		0		0
B026	MG10a	100		0		0		0		0		0		0		0
B051	U4	60	W24	35	MG9	5		0		0		0		0		0
B040	MG10a	52	U4	20	U5	20	MG9	5	S9a	2	M20	1		0		0
B030	MG9	95	MG10a	5		0		0		0		0		0		0
B176	MG10a	100		0		0		0		0		0		0		0
B174	MG10a	100		0		0		0		0		0		0		0
B172	MG10a	100		0		0		0		0		0		0		0
B157	H12a	50	H12c	48	MG9	2		0		0		0		0		0
B161	MG10a	95	U4a	5		0		0		0		0		0		0
B176	MG10a	100		0		0		0		0		0		0		0
B197	MG9	100		0		0		0		0		0		0		0
X048	M6c	100		0		0		0		0		0		0		0
X049	MG10a	100		0		0		0		0		0		0		0
X041	M6c	100		0		0		0		0		0		0		0
X053	M6	100		0		0		0		0		0		0		0
X056	M15c	60	H9-12	30	U5	10		0		0		0		0		0
X040	M15c	90	U5	7	M17	3		0		0		0		0		0
X034	M6c	94	U5a	6		0		0		0		0		0		0
X032	Je	100		0		0		0		0		0		0		0
X014	U5	75	Je	25		0		0		0		0		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
X030	M6c	100		0		0		0		0		0		0		0
X028	MG10a	100		0		0		0		0		0		0		0
X028	MG10a	100		0		0		0		0		0		0		0
X026	MG10a	100		0		0		0		0		0		0		0
X019	M6	70	M20	30		0		0		0		0		0		0
X026	MG10a	100		0		0		0		0		0		0		0
X015	M6b	60	M6c	40		0		0		0		0		0		0
X013	U4	45	Je	35	U5	20		0		0		0		0		0
X011	MG10a	96	U4	4		0		0		0		0		0		0
X007	MG10a	100		0		0		0		0		0		0		0
X006	Je	96	U5a	2	U6	2		0		0		0		0		0
X005	U6b	75	M10a	25		0		0		0		0		0		0
X004	MG10a	100		0		0		0		0		0		0		0
C001	M6c	85	M10a	15		0		0		0		0		0		0
C014	MG10a	90	M19a	10		0		0		0		0		0		0
C011	MG10a	86	M19a	10	M3	4		0		0		0		0		0
C050	M6c	90	U5a	10		0		0		0		0		0		0
C049	M6c	100		0		0		0		0		0		0		0
C048	M6c	100		0		0		0		0		0		0		0
C058	M20a	85	M25a	10	U5a	5		0		0		0		0		0
C059	M17a	80	M20a	10	M15b	5	M2	5		0		0		0		0
C047	U4b	80	MG10a	15	MG9	5		0		0		0		0		0
C046	M15b	80	M6c	20		0		0		0		0		0		0
C044	M15d	100		0		0		0		0		0		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
C043	U5a	80	MG10a	10	U4a	10		0		0		0		0		0
C082	U2a	80	M6a	20		0		0		0		0		0		0
C071	M6c	100		0		0		0		0		0		0		0
C070	M6c	80	M4	20		0		0		0		0		0		0
C072	M6c	100		0		0		0		0		0		0		0
C085	H12a	80	M6c	20		0		0		0		0		0		0
C092	U4b	90	MG10a	10		0		0		0		0		0		0
C118	U4b	85	MG10a	15		0		0		0		0		0		0
C120	U4b	90	MG10a	10		0		0		0		0		0		0
C117	U4b	80	M6c	20		0		0		0		0		0		0
C091	M6a	100		0		0		0		0		0		0		0
C094	U4b	90	MG10a	10		0		0		0		0		0		0
C096	M6a	50	SW	50		0		0		0		0		0		0
C104	MG10a	70	U4b	25	MG9	5		0		0		0		0		0
C101	U4a	60	U2a	20	M6a	20		0		0		0		0		0
C122	MG10a	100		0		0		0		0		0		0		0
C123	U4b	80	BG	15	MG10a	5		0		0		0		0		0
C132	U4b	80	MG10a	20		0		0		0		0		0		0
C130	MG10a	88	U4b	10	U5a	2		0		0		0		0		0
C130	MG10a	88	U4b	10	U5a	2		0		0		0		0		0
C194	MG10a	90	U4b	10		0		0		0		0		0		0
C128	MG10a	90	U4b	10		0		0		0		0		0		0
C199	U4b	90	MG10a	10		0		0		0		0		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
C124	MG10a	100		0		0		0		0		0		0		0
C125	MG10a	100		0		0		0		0		0		0		0
C189	U5a	95	MG9	5		0		0		0		0		0		0
C148	U6z	92	M3	8		0		0		0		0		0		0
C147	M6b	100		0		0		0		0		0		0		0
C144	MG10a	80	MG9	10	M6d	10		0		0		0		0		0
C188	U5a	65	U6d	20	U4a	15		0		0		0		0		0
C140	MG10a	100		0		0		0		0		0		0		0
C017	M19a	95	M23b	5		0		0		0		0		0		0
C019	MG10a	100		0		0		0		0		0		0		0
C020	MG9	95	U4a	5		0		0		0		0		0		0
C021	M23b	100		0		0		0		0		0		0		0
C022	MG9	95	MG10a	5		0		0		0		0		0		0
C023	M23b	100		0		0		0		0		0		0		0
C024	U4b	80	MG10a	15	U2a	5		0		0		0		0		0
C033	MG10a	100		0		0		0		0		0		0		0
C026	M23b	100		0		0		0		0		0		0		0
C180	M19a	80	MG9	10	U5d	10		0		0		0		0		0
C182	MG10a	100		0		0		0		0		0		0		0
C184	MG9	80	MG1	10	U4a	10		0		0		0		0		0
C183	MG10a	80	M25b	20		0		0		0		0		0		0
C185	M19a	50	M19b	30	M25b	10	U5d	10		0		0		0		0
C184	MG9	80	MG1	10	U4a	10		0		0		0		0		0
C155	MG10a	100		0		0		0		0		0		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
C160	MG9	88	MG10a	12		0		0		0		0		0		0
C168	M6a	80	MG9	20		0		0		0		0		0		0
C169	U5d	90	M6a	10		0		0		0		0		0		0
C170	U5d	75	U5b	20	MG9	5		0		0		0		0		0
C173	W4c	80	W17b	20		0		0		0		0		0		0
C174	M6c	80	U4a	20		0		0		0		0		0		0
C176	MG9	90	MG10a	10		0		0		0		0		0		0
C163	M6c	100		0		0		0		0		0		0		0
C187	M25b	80	M20	10	U5d	10		0		0		0		0		0
C166	M6b	100		0		0		0		0		0		0		0
C179	W4c	100		0		0		0		0		0		0		0
C099	U4	80	M6a	20		0		0		0		0		0		0
C136	MG10a	100		0		0		0		0		0		0		0
C164	M6c	100		0		0		0		0		0		0		0
C186	M25b	80	M20	10	U5d	10		0		0		0		0		0
J148	M6c	80	W19	15	U4	5		0		0		0		0		0
J150	MG10a	100		0		0		0		0		0		0		0
J147	H12b	55	W19	38	H9-12	5	M6c	2		0		0		0		0
J140	H12b	70	W19a	15	M23b	10	U4	3	U5	2		0		0		0
J154	U4b	95	MG10a	5		0		0		0		0		0		0
J138	M15	100		0		0		0		0		0		0		0
J135	M23b	100		0		0		0		0		0		0		0
J133	M19	85	H12	10	W19a	3	M6c	2		0		0		0		0
J129	M15	90	H9-12	10		0		0		0		0		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
J132	M19	85	M20	10	M6c	5		0		0		0		0		0
J125	W17b	55	W4c	30	H12a	10	M6c	5		0		0		0		0
J166	MG9	80	U4	20		0		0		0		0		0		0
J110	W4c	100		0		0		0		0		0		0		0
J102	M6c	100		0		0		0		0		0		0		0
J073	M16d	95	U5	5		0		0		0		0		0		0
J074	U6a	100		0		0		0		0		0		0		0
J076	U6	100		0		0		0		0		0		0		0
J098	M6c	100		0		0		0		0		0		0		0
J075	M15c	90	H12c	10		0		0		0		0		0		0
J083	M15b	100		0		0		0		0		0		0		0
J082	M25	100		0		0		0		0		0		0		0
J081	H10a	45	M15b	40	H9-12	15		0		0		0		0		0
J050	M19a	97	M6c	3		0		0		0		0		0		0
J049	U6	70	U5	30		0		0		0		0		0		0
J047	M15b	85	M19	10	U5	5		0		0		0		0		0
J046	M25a	100		0		0		0		0		0		0		0
J044	M6c	100		0		0		0		0		0		0		0
J041	M25a	100		0		0		0		0		0		0		0
J040	M16d	90	U6	5	M25	5		0		0		0		0		0
J039	M25	95	U5	5		0		0		0		0		0		0
J038	M15c	85	U6c	15		0		0		0		0		0		0
J037	M15	65	U4d	30	U5	5		0		0		0		0		0
J035	U5a	45	M16d	40	U6	15		0		0		0		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
J033	Je	80	M6c	15	H9a	3	U5	2		0		0		0		0
J032	U6	90	M20	5	U5	5		0		0		0		0		0
J030	U5	95	U6	5		0		0		0		0		0		0
J027	H9a	90	H9b	5	U4b	3	U6	2		0		0		0		0
J054	U6d	100		0		0		0		0		0		0		0
J025	MG10a	100		0		0		0		0		0		0		0
J024	MG10a	100		0		0		0		0		0		0		0
J021	W18c	70	CP	15	U4b	10	W4	5		0		0		0		0
J042	M6c	100		0		0		0		0		0		0		0
BH05	M6	100		0		0		0		0		0		0		0
BH06	M6a	100		0		0		0		0		0		0		0
BH16	M23b	57	S9	40	M6	3		0		0		0		0		0
BH15	M6c	80	M4	12	MG10a	3	M19a	2	U4a	2	MG9	1		0		0
BH19	M6c	90	M4	8	U4a	2		0		0		0		0		0
BH22	MG10a	84	MG9	8	M6c	5	U4a	3		0		0		0		0
BH24	MG9	95	U4a	5		0		0		0		0		0		0
BH31	M15b	58	M19a	40	H12a	2		0		0		0		0		0
BH32	M15b	50	M19a	33	M15c	10	H12a	5	H21a	2		0		0		0
BH30	MG10a	80	U4a	20		0		0		0		0		0		0
BH49	H9-12	85	M15b	15		0		0		0		0		0		0
BH42	M6c	82	MG10a	8	MG9	5	M15b	3	H9-12	2		0		0		0
BH41	M15b	85	MG9	10	MG10a	5		0		0		0		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
BH25	U4a	90	MG10a	6	MG9	4		0		0		0		0		0
A390	M6c	70	M17a	25	H9-12	5		0		0		0		0		0
Z027	MG10a	100		0		0		0		0		0		0		0
Z017	MG10a	55	U4	40	OV25	5		0		0		0		0		0
Z006	MG10a	95	U4	5		0		0		0		0		0		0
Z003	MG10a	80	U4	20		0		0		0		0		0		0
Z039	M25b	100		0		0		0		0		0		0		0
Z024	MG10a	95	U4	5		0		0		0		0		0		0
Z013	U5a	40	U4a	30	MG10a	30		0		0		0		0		0
Z012	MG9	90	U4	8	MG10a	2		0		0		0		0		0
Z036	M25a	100		0		0		0		0		0		0		0
DB_B085	Je	55	U4	45		0		0		0		0		0		0
DB_C059	M17a	80	M20a	10	M15b	5	M2	5		0		0		0		0
DB_C059	M17a	80	M20a	10	M15b	5	M2	5		0		0		0		0
DB_C117	U4b	80	M6c	20		0		0		0		0		0		0
DB_J133	M19	85	H12	10	W19a	3	M6c	2		0		0		0		0
DB_J132	M19	85	M20	10	M6c	5		0		0		0		0		0
DB_J081	H10a	45	M15b	40	H9-12	15		0		0		0		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
DB_J050	M19a	97	M6c	3		0		0		0		0		0		0
DB_J040	M16d	90	U6	5	M25	5		0		0		0		0		0
DB_J047	M15b	85	M19	10	U5	5		0		0		0		0		0
DB_J038	M15c	85	U6c	15		0		0		0		0		0		0
DB_J039	M25	95	U5	5		0		0		0		0		0		0
DB_J037	M15	65	U4d	30	U5	5		0		0		0		0		0
DB_X030	M6c	100		0		0		0		0		0		0		0
DB_X014	U5	75	Je	25		0		0		0		0		0		0
DB_X013	U4	45	Je	35	U5	20		0		0		0		0		0
DB_X013	U4	45	Je	35	U5	20		0		0		0		0		0
DB_A147	U4a	40	Je	35	U5a	15	U4b	10		0		0		0		0
DB_A118	H12b	40	M16d	28	M15b	20	H16	10	H21a	2		0		0		0
DB_A115	H12b	69	W19	20	H18a	10	M15a	1		0		0		0		0
DB_A114	H12b	78	H18a	10	H21a	10	M15a	1	U5a	1		0		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
DB_A100	M6c	85	M20	10	U5a	5		0		0		0		0		0
DB_A100	M6c	85	M20	10	U5a	5		0		0		0		0		0
DB_A095	H9-12	50	M16d	50		0		0		0		0		0		0
DB_C184	MG9	80	MG1	10	U4a	10		0		0		0		0		0
DB_B176	MG10a	100		0		0		0		0		0		0		0
BH15e	M6c	80	M4	12	MG10a	3	M19a	2	U4a	2	MG9	1		0		0
B099e	M6c	100		0		0		0		0		0		0		0
JM012	H9-12	60	MG9	20	MG10a	15	M6c	5		0		0		0		0
JM011	M23b	50	MG9	20	M6c	15	H9-12	15		0		0		0		0
JM001	Je	75	MG10a	15	MG9	10		0		0		0		0		0
JM013	M25	50	H9c	30	M19a	20		0		0		0		0		0
JM015	U4	75	M25	25		0		0		0		0		0		0
JM021	M19a	55	H9c	15	M25	15	M23b	14	M6c	1		0		0		0
JM025	U4b	85	MG10a	10	MG9	5		0		0		0		0		0
JM024	MG10a	100		0		0		0		0		0		0		0
JM026	W4b	100		0		0		0		0		0		0		0
JM027	M20	55	M6c	30	U4	15		0		0		0		0		0
JM028	M6c	60	MG9	40		0		0		0		0		0		0
JM029	MG10a	100		0		0		0		0		0		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
JM030	MG10a	100		0		0		0		0		0		0		0
JM060	U4	50	H9	40	MG9	10		0		0		0		0		0
JM060	U4	50	H9	40	MG9	10		0		0		0		0		0
JM059	U4b	60	H9	30	MG9	10		0		0		0		0		0
JJ017	U5	85	MG10a	13	OV25	2		0		0		0		0		0
JJ014	U4b	90	MG10a	10		0		0		0		0		0		0
JJ015	MG9	35	Je	25	MG10a	20	M6c	15	U5	5		0		0		0
JJ013	M6c	40	MG9	30	Je	30		0		0		0		0		0
JJ012	M15	55	M6c	40	U5	5		0		0		0		0		0
JJ011	U4b	65	U5	20	Je	15		0		0		0		0		0
JJ002	U4b	65	M23b	20	Je	15		0		0		0		0		0
JJ008	MG10a	100		0		0		0		0		0		0		0
JJ009	MG10a	100		0		0		0		0		0		0		0
JJ006	M15b	90	M6c	10		0		0		0		0		0		0
JJ004	U4b	95	MG10a	5		0		0		0		0		0		0
JJ003	MG10a	80	M6c	20		0		0		0		0		0		0
JJ005	M23b	65	M6c	35		0		0		0		0		0		0
CC027	MG9	70	H9-H12	25	MG10a	5		0		0		0		0		0
CC025	H9-H12	50	M19a	20	M6c	20	U2	10		0		0		0		0
CC026	MG10a	50	MG9	20	M6c	20	U2	10		0		0		0		0
CC024	H9-H12	90	MG10a	5	MG9	5		0		0		0		0		0
CC022	M23b	80	M6c	20		0		0		0		0		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
CC021	MG10a	80	MG9	15	H9-H12	5		0		0		0		0		0
CC017	M19a	85	M6c	15		0		0		0		0		0		0
CC014	M15b	70	H12a	30		0		0		0		0		0		0
CC013	H9-H12	80	M23b	20		0		0		0		0		0		0
CC009	H9-H12	80	M23b	20		0		0		0		0		0		0
CC002	H9-H12	80	M23b	20		0		0		0		0		0		0
CC004	M6c	80	M19a	20		0		0		0		0		0		0
CC038	M20	60	U5a	22	M6c	15	M2	3		0		0		0		0
CC037	M23b	80	U5a	20		0		0		0		0		0		0
CC034	M23b	60	M6	20	MG9	10	U4b	10		0		0		0		0
CC031	M6c	100		0		0		0		0		0		0		0
CC033	U5a	90	M25a	10		0		0		0		0		0		0
CC032	M17	60	M25a	20	U5a	20		0		0		0		0		0
CC044	MG9	60	U5a	30	U4b	10		0		0		0		0		0
CC046	M23b	90	M4	10		0		0		0		0		0		0
CC048	M23b	60	MG9	20	M4	15	M6c	5		0		0		0		0
CC049	U4b	80	MG10a	20		0		0		0		0		0		0
CC078	M15	60	MG10a	25	MG9	15		0		0		0		0		0
CC077	U4a	80	M6c	10	U5a	10		0		0		0		0		0
CC080	M6c	50	M23b	20	CF	30		0		0		0		0		0
CC086	M23b	80	M6c	20		0		0		0		0		0		0
CC081	MG9	60	M23b	20	M6c	10	CF	10		0		0		0		0
CW011	BG	85	MG10a	15		0		0		0		0		0		0

Poly_id	Nvc_1	Nvc_1 pc	Nvc_2	Nvc_2 pc	Nvc_3	Nvc_3 pc	Nvc_4	Nvc_4 pc	Nvc_5	Nvc_5 pc	Nvc_6	Nvc_6 pc	Nvc_7	Nvc_7 pc	Nvc_8	Nvc_8 pc
CW012	U4b	90	MG10a	10		0		0		0		0		0		0
CW017	MG9	80	MG10a	20		0		0		0		0		0		0
CW014	MG10a	90	U4b	10		0		0		0		0		0		0
CW013	U5b	80	MG10a	10	M20	10		0		0		0		0		0
CW022	MG9	70	U5a	20	U5b	10		0		0		0		0		0
CW021	MG10a	60	BG	30	U4a	10		0		0		0		0		0
CW018	MG10a	70	MG9	15	U5b	10	U4a	5		0		0		0		0
CW020	M20	90	M6c	10		0		0		0		0		0		0
CC010	M23b	100		0		0		0		0		0		0		0
JM004	MG9	60	H9-12	20	Je	15	H9	5		0		0		0		0
CC030	MG10a	80	M25b	10	U4a	10		0		0		0		0		0
CC043	M20	60	MG10a	20	U5a	20		0		0		0		0		0
J177	U4	60	M23b	30	CP	7	M6c	3		0		0		0		0
J177	U4	60	M23b	30	CP	7	M6c	3		0		0		0		0