

DOKUMENTATION SICKERWASSERPROGNOSE MIT HELP 3.95 D

Eingangsdaten Szenario 1

keine Deponieabdeckung, Hangneigung 3 %, Simulationsdauer 100 Jahre

Allgemeine Eingangsdaten und Angaben zur Evaporationszone

Eingangsdaten	Wert	Einheit
SCS RUNOFF CURVE NUMBER	95,63	
FRACTION OF AREA ALLOWING RUNOFF	0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	21,6	HECTARES
EVAPORATIVE ZONE DEPTH	50	CM
INITIAL WATER IN EVAPORATIVE ZONE	10	CM
UPPER LIMIT OF EVAPORATIVE STORAGE	25	CM
FIELD CAPACITY OF EVAPORATIVE ZONE	20	CM
LOWER LIMIT OF EVAPORATIVE STORAGE	7,5	CM
SOIL EVAPORATION ZONE DEPTH	50	CM
INITIAL SNOW WATER	0	CM
INITIAL INTERCEPTION WATER	0	CM
INITIAL WATER IN LAYER MATERIALS	900	CM
TOTAL INITIAL WATER	900	CM
TOTAL SUBSURFACE INFLOW	0	MM/YR

Eingangsdaten Evapotranspiration

Evapotranspiration Eingangsdaten	Wert	Einheit
STATION LATITUDE	51,83	DEGREES
MAXIMUM LEAF AREA INDEX	0	
START OF GROWING SEASON (JULIAN DATE)	80	
END OF GROWING SEASON (JULIAN DATE)	315	
EVAPORATIVE ZONE DEPTH	50	CM
AVERAGE ANNUAL WIND SPEED	3,5	KPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	81,6	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	73	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	76,8	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	85,3	%

Diskretisierung des Schichtmodells

	Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Einheit
Art	Type 1					
Beschreibung	VERTICAL PERCOLATION LAYER					
Material-/Textur-Nr. HELP	0					
THICKNESS	4500					cm
POROSITY	0,5					Vol./Vol.
FIELD CAPACITY	0,4					Vol./Vol.
WILTING POINT	0,15					Vol./Vol.
INITIAL SOIL WATER CONTENT	0,2					Vol./Vol.
EFFECTIVE SAT, HYD, CONDUCT	1,00E-05					cm/s
SLOPE						%
DRAINAGE LENGTH						m
Bemerkung	Abfallkörper					

Berechnete Jahresmittelwerte über einen Zeitraum von 100 Jahren

	Ergebnis [mm/a]	Standardabw. [mm]	Ergebnis [%]
PRECIPITATION	762,87	103,984	100
RUNOFF	0	0	0
POTENTIAL EVAPOTRANSPIRATION	546,378	69,7654	
ACTUAL EVAPOTRANSPIRATION	347,553	82,9069	45,559
PERCOLATION/LEAKAGE THROUGH	323,3389	198,3675	42,38479
LAYER 1			
Zeitraum bis zum Durchbruch an Deponiebasis	22 Jahre		
CHANGE IN WATER STORAGE	91,974	9,953	12,056

Eingangsdaten Szenario 2

keine Deponieabdeckung, Hangneigung 20 %, Simulationsdauer 100 Jahre

Allgemeine Eingangsdaten und Angaben zur Evaporationszone

Eingangsdaten	Wert	Einheit
SCS RUNOFF CURVE NUMBER	96,54	
FRACTION OF AREA ALLOWING RUNOFF	100	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	21,6	HECTARES
EVAPORATIVE ZONE DEPTH	50	CM
INITIAL WATER IN EVAPORATIVE ZONE	10	CM
UPPER LIMIT OF EVAPORATIVE STORAGE	25	CM
FIELD CAPACITY OF EVAPORATIVE ZONE	20	CM
LOWER LIMIT OF EVAPORATIVE STORAGE	7,5	CM
SOIL EVAPORATION ZONE DEPTH	50	CM
INITIAL SNOW WATER	0	CM
INITIAL INTERCEPTION WATER	0	CM
INITIAL WATER IN LAYER MATERIALS	900	CM
TOTAL INITIAL WATER	900	CM
TOTAL SUBSURFACE INFLOW	0	MM/YR

Eingangsdaten Evapotranspiration

Evapotranspiration Eingangsdaten	Wert	Einheit
STATION LATITUDE	51,83	DEGREES
MAXIMUM LEAF AREA INDEX	0	
START OF GROWING SEASON (JULIAN DATE)	80	
END OF GROWING SEASON (JULIAN DATE)	315	
EVAPORATIVE ZONE DEPTH	50	CM
AVERAGE ANNUAL WIND SPEED	3,5	KPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	81,6	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	73	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	76,8	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	85,3	%

Diskretisierung des Schichtmodells

	Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Einheit
Art	Type 1					
Beschreibung	VERTICAL PERCOLATION LAYER					
Material-/Textur-Nr. HELP	0					
THICKNESS	4500					cm
POROSITY	0,5					Vol./Vol.
FIELD CAPACITY	0,4					Vol./Vol.
WILTING POINT	0,15					Vol./Vol.
INITIAL SOIL WATER CONTENT	0,2					Vol./Vol.
EFFECTIVE SAT, HYD, CONDUCT	1,00E-05					cm/s
SLOPE	20					%
DRAINAGE LENGTH	250					m
Bemerkung	Abfallkörper					

Berechnete Jahresmittelwerte über einen Zeitraum von 100 Jahren

	Ergebnis [mm/a]	Standardabw. [mm]	Ergebnis [%]
PRECIPITATION	762,87	103,984	100
RUNOFF	256,454	57,8713	33,617
POTENTIAL EVAPOTRANSPIRATION	558,843	28,5045	
ACTUAL EVAPOTRANSPIRATION	328,67	36,6855	43,084
PERCOLATION/LEAKAGE THROUGH	87,1539	93,9516	11,4245
LAYER 1			
Zeitraum bis zum Durchbruch an Deponiebasis	50 Jahre		
CHANGE IN WATER STORAGE	90,587	3,8488	11,875

Eingangsdaten Szenario 3

Deponieabdichtung, Hangneigung 3 %, Simulationsdauer 100 Jahre

Allgemeine Eingangsdaten und Angaben zur Evaporationszone

Eingangsdaten	Wert	Einheit
SCS RUNOFF CURVE NUMBER	85,66	
FRACTION OF AREA ALLOWING RUNOFF	100	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	21,6	HECTARES
EVAPORATIVE ZONE DEPTH	50	CM
INITIAL WATER IN EVAPORATIVE ZONE	9,05	CM
UPPER LIMIT OF EVAPORATIVE STORAGE	21,7	CM
FIELD CAPACITY OF EVAPORATIVE ZONE	14,1	CM
LOWER LIMIT OF EVAPORATIVE STORAGE	7,8	CM
SOIL EVAPORATION ZONE DEPTH	50	CM
INITIAL SNOW WATER	0	CM
INITIAL INTERCEPTION WATER	0	CM
INITIAL WATER IN LAYER MATERIALS	952,954	CM
TOTAL INITIAL WATER	952,954	CM
TOTAL SUBSURFACE INFLOW	0	MM/YR

Eingangsdaten Evapotranspiration

Evapotranspiration Eingangsdaten	Wert	Einheit
STATION LATITUDE	51,83	DEGREES
MAXIMUM LEAF AREA INDEX	5	
START OF GROWING SEASON (JULIAN DATE)	80	
END OF GROWING SEASON (JULIAN DATE)	315	
EVAPORATIVE ZONE DEPTH	50	CM
AVERAGE ANNUAL WIND SPEED	3,5	KPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	81,6	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	73	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	76,8	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	85,3	%

Diskretisierung des Schichtmodells

	Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Einheit
Art	Type 1	Type 1	Type 2	Type 3	Type 1	
Beschreibung	VERTICAL PERCOLATION LAYER	VERTICAL PERCOLATION LAYER	LATERAL DRAINAGE LAYER	BARRIER SOIL LINER	VERTICAL PERCOLATION LAYER	
Material-/Textur-Nr. HELP	309	315	34	0	0	
THICKNESS	30	100	0,6	50	4500	cm
POROSITY	0,43	0,44	0,85	0,43	0,5	Vol./Vol.
FIELD CAPACITY	0,23	0,36	0,01	0,42	0,4	Vol./Vol.
WILTING POINT	0,08	0,27	0,005	0,38	0,15	Vol./Vol.
INITIAL SOIL WATER CONTENT	0,3	0,28	0,006	0,43	0,2	Vol./Vol.
EFFECTIVE SAT, HYD, CONDUCT	6,83E-04	8,10E-05	33	1,20E-07	1,00E-05	cm/s
SLOPE	VERTICAL PERCOLATION LAYER	VERTICAL PERCOLATION LAYER	3			%
DRAINAGE LENGTH	309	315	250			m
Bemerkung	Mutterboden	Rekultivierungsschicht	Dränage-Vlies	Dichtschicht	Abfallkörper	

Berechnete Jahresmittelwerte über einen Zeitraum von 100 Jahren

	Ergebnis [mm/a]	Standardabw. [mm]	Ergebnis [%]
PRECIPITATION	762,87	103,984	100
RUNOFF	9,802	10,3414	1,285
POTENTIAL EVAPOTRANSPIRATION	558,843	28,5045	
ACTUAL EVAPOTRANSPIRATION	403,51	38,7667	52,894
LATERAL DRAINAGE COLLECTED	330,20084	91,62790	43,28429
FROM LAYER 3			
PERCOLATION/LEAKAGE THROUGH	17,87559	4,09357	2,34322
LAYER 4			
AVERAGE HEAD ON TOP	0,138	0,051	

	Ergebnis [mm/a]	Standardabw. [mm]	Ergebnis [%]
OF LAYER 4			
PERCOLATION/LEAKAGE THROUGH LAYER 5	0	0	0
CHANGE IN WATER STORAGE	19,353	0,9769	2,537

Eingangsdaten Szenario 4

Rekultivierungsschicht, Drainage-Vlies, Deponieabdichtung, Hangneigung 20 %, Simulationsdauer 100 Jahre

Allgemeine Eingangsdaten und Angaben zur Evaporationszone

Eingangsdaten	Wert	Einheit
SCS RUNOFF CURVE NUMBER	86,35	
FRACTION OF AREA ALLOWING RUNOFF	100	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	21,6	HECTARES
EVAPORATIVE ZONE DEPTH	50	CM
INITIAL WATER IN EVAPORATIVE ZONE	9,05	CM
UPPER LIMIT OF EVAPORATIVE STORAGE	21,7	CM
FIELD CAPACITY OF EVAPORATIVE ZONE	14,1	CM
LOWER LIMIT OF EVAPORATIVE STORAGE	7,8	CM
SOIL EVAPORATION ZONE DEPTH	50	CM
INITIAL SNOW WATER	0	CM
INITIAL INTERCEPTION WATER	0	CM
INITIAL WATER IN LAYER MATERIALS	952,954	CM
TOTAL INITIAL WATER	952,954	CM
TOTAL SUBSURFACE INFLOW	0	MM/YR

Eingangsdaten Evapotranspiration

Evapotranspiration Eingangsdaten	Wert	Einheit
STATION LATITUDE	51,83	DEGREES
MAXIMUM LEAF AREA INDEX	5	
START OF GROWING SEASON (JULIAN DATE)	80	
END OF GROWING SEASON (JULIAN DATE)	315	
EVAPORATIVE ZONE DEPTH	50	CM
AVERAGE ANNUAL WIND SPEED	3,5	KPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	81,6	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	73	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	76,8	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	85,3	%

Diskretisierung des Schichtmodells

	Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Einheit
Art	Type 1	Type 1	Type 2	Type 3	Type 1	
Beschreibung	VERTICAL PERCOLATION LAYER	VERTICAL PERCOLATION LAYER	LATERAL DRAINAGE LAYER	BARRIER SOIL LINER	VERTICAL PERCOLATION LAYER	
Material-/Textur-Nr. HELP	309	315	34	0	0	
THICKNESS	30	100	0,6	50	4500	cm
POROSITY	0,43	0,44	0,85	0,43	0,5	Vol./Vol.
FIELD CAPACITY	0,23	0,36	0,01	0,42	0,4	Vol./Vol.
WILTING POINT	0,08	0,27	0,005	0,38	0,15	Vol./Vol.
INITIAL SOIL WATER CONTENT	0,3	0,28	0,006	0,43	0,2	Vol./Vol.
EFFECTIVE SAT, HYD, CONDUCT	6,83E-04	8,10E-05	33	1,20E-07	1,00E-05	cm/s
SLOPE			20			%
DRAINAGE LENGTH			250			m
Bemerkung	Mutterboden	Rekultivierungsschicht	Dränage-Vlies	Dichtsicht	Abfallkörper	

Berechnete Jahresmittelwerte über einen Zeitraum von 100 Jahren

	Ergebnis [mm/a]	Standardabw. [mm]	Ergebnis [%]
PRECIPITATION	762,87	103,984	100
RUNOFF	11,4	11,0926	1,494
POTENTIAL EVAPOTRANSPIRATION	558,843	28,5045	
ACTUAL EVAPOTRANSPIRATION	403,483	38,867	52,891
LATERAL DRAINAGE COLLECTED	318,82785	91,3029	43,10882
FROM LAYER 3			
PERCOLATION/LEAKAGE THROUGH	17,63535	4,0597	2,3172
LAYER 4			
AVERAGE HEAD ON TOP	0,021	0	
OF LAYER 4			
PERCOLATION/LEAKAGE THROUGH	0	0	0
LAYER 5			
CHANGE IN WATER STORAGE	19,119	1,0231	2,506