

# Dispersion Report

## Workspace: 72341-3InvioGN

**Study: Invio GN a metanodotto**

**Equipment Item: 11R Metanodotto piattaforma Alt A**

72341-3InvioGN\Invio GN a metanodotto\11R Metanodotto piattaforma Alt A

Material	<b>GAS NATURALE</b>	
East	0	m
North	0	m

### Scenario (Leak) : 130mm

72341-3InvioGN\Invio GN a metanodotto\11R Metanodotto piattaforma Alt A\130mm

Material to track	<b>GAS NATURALE</b>
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### Weather: Category 2/F

Wind speed [m/s]	2
Pasquill stability	F stable - night with moderate clouds and light/moderate wind
Atmospheric temperature [degC]	25
Relative humidity [fraction]	0,75
Solar radiation flux [kW/m2]	0,5
Mixing layer height [m]	100

### Observer Release Data and Observer Mass Data

Observer number	Release type	Start time [s]	Start downwind distance [m]	Unit	Masses or mass rates		
					Release	Rainout	Final
1	Continuous	0	0	kg/s	119,946	0	119,946
2	Continuous	13,1955	0	kg/s	119,946	0	119,946

## Time-varying Observer Dispersion Data (before along-wind-diffusion effects)

Dispersion data correspond to an averaging time of: 18,75 s

Observer number	Time [s]	Down wind distance [m]	C/Line height [m]	C/Line conc [ppm]	Effective width [m]	Effective depth [m]	C/Line vapour temperature [degC]	C/Line liquid fraction	Centroid velocity [m/s]	C/Line cloud density [kg/m <sup>3</sup> ]
1	0	0	1	999.99 9,41	0,7184 21	0,3593 97	-5,13685	0	300	0,7742 5
1	0,01	0,00469 323	3,172 92	691.77 9,01	1,1615 3	0,5809 06	2,90424	0	171,15 6	0,9103 99
1	0,02	0,01424 08	4,671 58	574.57 3,25	1,4546 3	0,7273 87	6,7713	0	133,29 4	0,9574 05
1	0,03	0,02651 7	5,894 29	505.66 6,03	1,6896 5	0,8448 21	8,94691	0	113,17 2	0,9846 6
1	0,04	0,04077 38	6,954 11	457.99 5,15	1,8932	0,9465 24	10,3889	0	100,06 9	1,0034 2
1	0,05	0,05660 69	7,903 19	421.51 0,21	2,0798 3	1,0397 7	11,4592	0	90,459 9	1,0177 2
1	0,06	0,07376 72	8,768 6	392.03 7,93	2,2557 6	1,1276 6	12,3032	0	82,948 1	1,0292 4
1	0,07	0,09208 22	9,566 81	367.40 7,01	2,4243	1,2118 5	12,995	0	76,834 7	1,0388 4
1	0,08	0,11142 4	10,30 86	346.35 0,06	2,5872 6	1,2932 6	13,5769	0	71,723	1,0470 3
1	0,09	0,13168 6	11,00 29	328.16 8,58	2,7446 9	1,3719	14,0724	0	67,392	1,0540 8
1	0,1	0,15278 1	11,65 72	312.44 4,27	2,8955 2	1,4472 5	14,496	0	63,706 8	1,0601 7
1	0,11	0,17463 7	12,27 71	298.73 2,78	3,0399 2	1,5193 8	14,8618	0	60,538 4	1,0654 6
1	0,12	0,19719 7	12,86 76	286.57 5,95	3,1794 2	1,5890 6	15,1834	0	57,763 6	1,0701 5
1	0,13	0,22041	13,43 24	275.64 2,95	3,3156 5	1,6571 1	15,5366	0	55,295 4	1,0741 4

1	0,14	0,24423	13,97	265.76	3,4483	1,7234	15,868	0	53,087	1,0776
		6	39	6,42	6				7	8
1	0,15	0,26863	14,49	256.80	3,5775	1,7879	16,1701	0	51,103	1,0808
		5	42	8,97					3	9
1	0,16	0,29357	14,99	248.62	3,7034	1,8508	16,4473	0	49,305	1,0837
		6	54	8,72	9	5			8	9
1	0,17	0,31902	15,47	241.10	3,8268	1,9124	16,7034	0	47,665	1,0864
		7	94	6,27	8	6			2	6
1	0,18	0,34495	15,94	234.15	3,9479	1,9729	16,9412	0	46,158	1,0889
		8	79	1,33	3	4			8	1
1	0,19	0,37135	16,40	227.69	4,0668	2,0323	17,1626	0	44,770	1,0911
			2	8,36	1	2			1	7
1	0,2	0,39818	16,84	221.68	4,1836	2,0907	17,3695	0	43,484	1,0932
			27	9,60	8				6	7
1	0,212	0,43092	17,35	214.99	4,3215	2,1595	17,601	0	42,061	1,0956
		4	54	4,49	3	6			1	
1	0,226	0,47095	17,94	207.60	4,4838	2,2406	17,8574	0	40,501	1,0981
	4	9	93	8,25	2	2			3	5
1	0,243	0,52001	18,63	199.54	4,6744	2,3358	18,1386	0	38,812	1,1009
	68	8	39	9,20	4	4			1	3
1	0,264	0,58025	19,41	190.85	4,8979	2,4474	18,4434	0	37,004	1,1039
	416	5	86	5,86	1	7			9	
1	0,289	0,65436	20,31	181.58	5,1593	2,5780	18,7702	0	35,095	1,1070
	299	2	33	8,57	7	8			5	5
1	0,319	0,74570	21,32	171.83	5,4646	2,7305	19,1165	0	33,104	1,1103
	159	2	66	1,12	9	9			3	4
1	0,354	0,85842	22,46	161.67	5,8208	2,9085	19,4793	0	31,053	1,1137
	991	1	87	6,69	7	2			1	3
1	0,397	0,99769	23,74	151.24	6,2354	3,1156	19,8547	0	28,969	1,1171
	989	8	61	7,91	6	3			4	7
1	0,449	1,16984	25,16	140.66	6,7174	3,3564	20,2384	0	26,879	1,1206
	587		76	6,32	7	3			3	3
1	0,511	1,38248	26,74	130.04	7,2777	3,6363	20,6267	0	24,807	1,1240
	504		56	8,43	7	6			6	6
1	0,585	1,64507	28,48	119.52	7,9280	3,9612	21,0149	0	22,780	1,1274
	805		54	4,75	5	5			8	1
1	0,674	1,969	30,39	109.20	8,6827	4,3382	21,3992	0	20,820	1,1306
	966		55	3,08		9			3	5

1	0,781 959	2,36859	32,48 07	99.183, 93	9,5580 6	4,7756 8	21,7759	0	18,946	1,1337 3
1	0,910 351	2,86197	34,74 75	89.550, 41	10,573 2	5,2829 4	22,1418	0	17,174	1,1366 4
1	1,064 42	3,47188	37,19 53	80.380, 97	11,748 4	5,8702	22,494	0	15,519 8	1,1393 4
1	1,249 31	4,22656	39,81 9	71.738, 87	13,105	6,5481 4	22,8297	0	13,995 7	1,1418 2
1	1,471 17	5,16099	42,61 06	63.671, 12	14,664 3	7,3274 3	23,147	0	12,611 2	1,1440 7
1	1,737 4	6,31801	45,56 98	56.204, 68	16,446 8	8,2183 3	23,4446	0	11,372 7	1,1460 8
1	2,056 88	7,7506	48,69 3	49.357, 40	18,467 3	9,2282 6	23,7215	0	10,284 7	1,1478 4
1	2,440 26	9,52386	51,97 87	43.134, 64	20,732	10,360 3	23,9771	0	9,3491 5	1,1493 6
1	2,900 31	11,7181	55,43 53	37.528, 61	23,235 1	11,611 5	24,2118	0	8,5651 2	1,1506 4
1	3,452 37	14,4331	59,05 87	32.523, 81	25,956 1	12,971 7	24,4256	0	7,9284 5	1,1516 9
1	4,114 84	17,7915	62,84 36	28.094, 13	28,862 7	14,424 7	24,6194	0	7,4308 9	1,1525 2
1	4,909 81	21,9432	66,81 57	24.201, 76	31,917 9	15,952 1	24,7946	0	7,0608 7	1,1531 4
1	4,977 7	22,3034	67,13 13	23.921, 22	32,16	16,073 1	24,8074	0	7,0370 8	1,1531 8
1	5,863 77	27,0958	70,88 82	20.809, 86	35,088 7	17,537 2	24,9518	0	6,8013 3	1,1535 7
1	7,008 53	33,4663	75,11 83	17.861, 50	38,361 3	19,173 4	25,0935	0	6,6359 8	1,1538 3
1	8,382 23	41,308	79,61 51	15.299, 27	41,738 1	20,861 6	25,2225	0	6,5504 8	1,1539 2
1	10,03 07	50,9717	84,39 46	13.077, 66	45,234 2	22,609 5	25,3405	0	6,5305 1	1,1538 5
1	10,96 71	56,5783	86,85 83	12.089, 27	47,022 5	23,503 6	25,3954	0	6,5403 4	1,1537 7
2	13,19	0	1	999.99	0,7184	0,3593	-5,13685	0	300	0,7742

	55		9,41	21	97				5	
2	13,20 55	0,00469 323	3,172 92	691.77 9,01	1,1615 3	0,5809 06	2,90424	0	171,15 6	0,9103 99
2	13,21 55	0,01424 08	4,671 58	574.57 3,25	1,4546 3	0,7273 87	6,7713	0	133,29 4	0,9574 05
2	13,22 55	0,02651 7	5,894 29	505.66 6,03	1,6896 5	0,8448 21	8,94691	0	113,17 2	0,9846 6
2	13,23 55	0,04077 38	6,954 11	457.99 5,15	1,8932	0,9465 24	10,3889	0	100,06 9	1,0034 2
2	13,24 55	0,05660 69	7,903 19	421.51 0,21	2,0798 3	1,0397 7	11,4592	0	90,459 9	1,0177 2
2	13,25 55	0,07376 72	8,768 6	392.03 7,93	2,2557 6	1,1276 6	12,3032	0	82,948 1	1,0292 4
2	13,26 55	0,09208 22	9,566 81	367.40 7,01	2,4243	1,2118 5	12,995	0	76,834 7	1,0388 4
2	13,27 55	0,11142 4	10,30 86	346.35 0,06	2,5872 6	1,2932 6	13,5769	0	71,723	1,0470 3
2	13,28 55	0,13168 6	11,00 29	328.16 8,58	2,7446 9	1,3719	14,0724	0	67,392	1,0540 8
2	13,29 55	0,15278 1	11,65 72	312.44 4,27	2,8955 2	1,4472 5	14,496	0	63,706 8	1,0601 7
2	13,30 55	0,17463 7	12,27 71	298.73 2,78	3,0399 2	1,5193 8	14,8618	0	60,538 4	1,0654 6
2	13,31 55	0,19719 7	12,86 76	286.57 5,95	3,1794 2	1,5890 6	15,1834	0	57,763 6	1,0701 5
2	13,32 55	0,22041	13,43 24	275.64 2,95	3,3156 5	1,6571 1	15,5366	0	55,295 4	1,0741 4
2	13,33 55	0,24423 6	13,97 39	265.76 6,42	3,4483 6	1,7234	15,868	0	53,087 7	1,0776 8
2	13,34 55	0,26863 5	14,49 42	256.80 8,97	3,5775	1,7879	16,1701	0	51,103 3	1,0808 9
2	13,35 55	0,29357 6	14,99 54	248.62 8,72	3,7034 9	1,8508 5	16,4473	0	49,305 8	1,0837 9
2	13,36 55	0,31902 7	15,47 94	241.10 6,27	3,8268 8	1,9124 6	16,7034	0	47,665 2	1,0864 6
2	13,37 55	0,34495 8	15,94 79	234.15 1,33	3,9479 3	1,9729 4	16,9412	0	46,158 8	1,0889 1
2	13,38	0,37135	16,40	227.69	4,0668	2,0323	17,1626	0	44,770	1,0911

	55		2	8,36	1	2			1	7
2	13,39 55	0,39818	16,84 27	221.68 9,60	4,1836 8	2,0907	17,3695	0	43,484 6	1,0932 7
2	13,40 75	0,43092 4	17,35 54	214.99 4,49	4,3215 3	2,1595 6	17,601	0	42,061 1	1,0956
2	13,42 19	0,47095 9	17,94 93	207.60 8,25	4,4838 2	2,2406 2	17,8574	0	40,501 3	1,0981 5
2	13,43 92	0,52001 8	18,63 39	199.54 9,20	4,6744 4	2,3358 4	18,1386	0	38,812 1	1,1009 3
2	13,45 99	0,58025 5	19,41 86	190.85 5,86	4,8979 1	2,4474 7	18,4434	0	37,004 9	1,1039
2	13,48 48	0,65436 2	20,31 33	181.58 8,57	5,1593 7	2,5780 8	18,7702	0	35,095 5	1,1070 5
2	13,51 47	0,74570 2	21,32 66	171.83 1,12	5,4646 9	2,7305 9	19,1165	0	33,104 3	1,1103 4
2	13,55 05	0,85842 1	22,46 87	161.67 6,69	5,8208 7	2,9085 2	19,4793	0	31,053 1	1,1137 3
2	13,59 35	0,99769 8	23,74 61	151.24 7,91	6,2354 6	3,1156 3	19,8547	0	28,969 4	1,1171 7
2	13,64 51	1,16984	25,16 76	140.66 6,32	6,7174 7	3,3564 3	20,2384	0	26,879 3	1,1206 3
2	13,70 7	1,38248	26,74 56	130.04 8,43	7,2777 7	3,6363 6	20,6267	0	24,807 6	1,1240 6
2	13,78 13	1,64507	28,48 54	119.52 4,75	7,9280 5	3,9612 5	21,0149	0	22,780 8	1,1274 1
2	13,87 05	1,969	30,39 55	109.20 3,08	8,6827	4,3382 9	21,3992	0	20,820 3	1,1306 5
2	13,97 75	2,36859	32,48 07	99.183, 93	9,5580 6	4,7756 8	21,7759	0	18,946	1,1337 3
2	14,10 59	2,86197	34,74 75	89.550, 41	10,573 2	5,2829 4	22,1418	0	17,174	1,1366 4
2	14,25 99	3,47188	37,19 53	80.380, 97	11,748 4	5,8702	22,494	0	15,519 8	1,1393 4
2	14,44 48	4,22656	39,81 9	71.738, 87	13,105	6,5481 4	22,8297	0	13,995 7	1,1418 2
2	14,66 67	5,16099	42,61 06	63.671, 12	14,664 3	7,3274 3	23,147	0	12,611 2	1,1440 7
2	14,93	6,31801	45,56	56.204,	16,446	8,2183	23,4446	0	11,372	1,1460

	29		98	68	8	3			7	8
2	15,25 24	7,7506	48,69 3	49.357, 40	18,467 3	9,2282 6	23,7215	0	10,284 7	1,1478 4
2	15,63 58	9,52386	51,97 87	43.134, 64	20,732	10,360 3	23,9771	0	9,3491 5	1,1493 6
2	16,09 58	11,7181	55,43 53	37.528, 61	23,235 1	11,611 5	24,2118	0	8,5651 2	1,1506 4
2	16,64 79	14,4331	59,05 87	32.523, 81	25,956 1	12,971 7	24,4256	0	7,9284 5	1,1516 9
2	17,31 04	17,7915	62,84 36	28.094, 13	28,862 7	14,424 7	24,6194	0	7,4308 9	1,1525 2
2	18,10 53	21,9432	66,81 57	24.201, 76	31,917 9	15,952 1	24,7946	0	7,0608 7	1,1531 4
2	18,17 32	22,3034	67,13 13	23.921, 22	32,16	16,073 1	24,8074	0	7,0370 8	1,1531 8
2	19,05 93	27,0958	70,88 82	20.809, 86	35,088 7	17,537 2	24,9518	0	6,8013 3	1,1535 7
2	20,20 4	33,4663	75,11 83	17.861, 50	38,361 3	19,173 4	25,0935	0	6,6359 3	1,1538 3
2	21,57 77	41,308	79,61 51	15.299, 27	41,738 1	20,861 6	25,2225	0	6,5504 8	1,1539 2
2	23,22 62	50,9717	84,39 46	13.077, 66	45,234 2	22,609 5	25,3405	0	6,5305 1	1,1538 5
2	24,16 26	56,5783	86,85 83	12.089, 27	47,022 5	23,503 6	25,3954	0	6,5403 4	1,1537 7

### Weather: Category 5/D

Wind speed [m/s]	5
Pasquill stability	D neutral - little sun and high wind or overcast/windy night
Atmospheric temperature [degC]	25
Relative humidity [fraction]	0,75
Solar radiation flux [kW/m2]	0,5
Mixing layer height [m]	800

### Observer Release Data and Observer Mass Data

Observer number	Release type	Start time [s]	Start downwind distance [m]	Unit	Masses or mass rates		
					Release	Rainout	Final
1	Continuous	0	0	kg/s	119,946	0	119,946
2	Continuous	13,1955	0	kg/s	119,946	0	119,946

### Time-varying Observer Dispersion Data (before along-wind-diffusion effects)

Dispersion data correspond to an averaging time of: 18,75 s

Observer number	Time [s]	Down wind distance [m]	C/Line height [m]	C/Line conc [ppm]	Effective width [m]	Effective depth [m]	C/Line vapour temperature [degC]	C/Line liquid fraction	Centroid velocity [m/s]	C/Line cloud density [kg/m3]
1	0	0	1	999.999,41	0,718608	0,359304	-5,13685	0	300	0,77425
1	0,01	0,0150344	3,16178	687.512,24	1,17042	0,585212	2,96939	0	169,695	0,912426
1	0,02	0,0436516	4,64542	569.575,19	1,46935	0,734676	6,78045	0	131,804	0,959967
1	0,03	0,07883	5,854	500.29	1,7098	0,8549	8,92356	0	111,69	0,9875



		7	46	9,00		02			9	15
1	0,04	0,11842 3	6,900 23	451.39 4,77	1,9234 4	0,9617 19	10,3679	0	98,354 3	1,0068 8
1	0,05	0,16134 5	7,829 39	412.63 3,19	2,1283 4	1,0641 7	11,4738	0	88,238 2	1,0221 9
1	0,06	0,20690 8	8,668 67	380.41 4,74	2,3300 9	1,1650 5	12,3679	0	80,123	1,0348 9
1	0,07	0,25466 1	9,433 65	353.00 0,35	2,5304 6	1,2652 3	13,111	0	73,418 5	1,0456 8
1	0,08	0,30426 2	10,13 61	329.32 7,91	2,7300 3	1,3650 2	13,7399	0	67,772 3	1,0549 7
1	0,09	0,35541 2	10,78 69	309.13 4,44	2,9241 5	1,4620 7	14,2671	0	63,058 4	1,0628 9
1	0,1	0,40790 8	11,39 42	291.89 8,27	3,1109	1,5554 5	14,7285	0	59,108 1	1,0695 8
1	0,11	0,46157 4	11,96 48	276.98 9,13	3,2913 7	1,6456 8	15,2096	0	55,744 8	1,0750 7
1	0,12	0,51628 7	12,50 37	263.93 7,87	3,4658 7	1,7329 4	15,6331	0	52,841 1	1,0798 5
1	0,13	0,57193 5	13,01 5	252.36 4,16	3,6355	1,8177 5	16,0105	0	50,297 4	1,0840 6
1	0,14	0,62842 4	13,50 21	242.01 1,49	3,8007 7	1,9003 9	16,3495	0	48,047	1,0878 1
1	0,15	0,68565 7	13,96 86	232.66 4,87	3,9624	1,9812	16,6567	0	46,035 4	1,0911 8
1	0,16	0,74358	14,41 61	224.17 8,54	4,1206 1	2,0603	16,9366	0	44,225 6	1,0942 3
1	0,17	0,80212 4	14,84 7	216.42 2,18	4,2758 4	2,1379 2	17,1931	0	42,585 2	1,097
1	0,18	0,86125 1	15,26 21	209.30 1,84	4,4282 5	2,2141 3	17,4293	0	41,091	1,0995 4
1	0,19	0,92091 7	15,66 28	202.73 4,26	4,5781	2,2890 5	17,6477	0	39,722 8	1,1018 7
1	0,2	0,98108 5	16,04 98	196.65 2,53	4,7255 6	2,3627 8	17,8503	0	38,464 4	1,1040 2
1	0,212	1,0539	16,49 77	189.91 6,44	4,8996 2	2,4498 1	18,0753	0	37,080 2	1,1064
1	0,226	1,1421	17,01	182.53	5,1046	2,5523	18,3224	0	35,575	1,1089

	4		33	4,97	8	4			2	9
1	0,243 68	1,24897	17,60 42	174.53 6,30	5,3458 4	2,6729 2	18,5908	0	33,958 6	1,1117 9
1	0,264 416	1,37852	18,27 85	165.97 1,27	5,6289 4	2,8144 7	18,879	0	32,244 2	1,1147 7
1	0,289 299	1,53566	19,04 2	156.91 7,16	5,9605	2,9802 5	19,1844	0	30,451 1	1,1179 1
1	0,319 159	1,72625	19,90 24	147.46 6,73	6,3480 7	3,1740 4	19,504	0	28,601 4	1,1211 6
1	0,354 991	1,95736	20,86 58	137.73 3,29	6,8000 6	3,4000 4	19,8339	0	26,720 7	1,1244 9
1	0,397 989	2,23743	21,93 87	127.83 5,92	7,3261 6	3,6630 9	20,1701	0	24,835 1	1,1278 6
1	0,449 587	2,57645	23,12 81	117.89 6,05	7,9374 8	3,9687 5	20,5083	0	22,970 8	1,1312 1
1	0,511 504	2,98643	24,43 35	108.05 1,81	8,6451 3	4,3225 7	20,8435	0	21,156 1	1,1345 1
1	0,585 805	3,48127	25,85 82	98.418, 68	9,4621 6	4,7310 9	21,1717	0	19,414	1,1377 1
1	0,674 966	4,07728	27,40 24	89.105, 51	10,402	5,2010 3	21,4888	0	17,765 8	1,1407 7
1	0,781 959	4,79348	29,06 92	80.199, 71	11,479 3	5,7396 6	21,7915	0	16,227 9	1,1436 7
1	0,910 351	5,65391	30,86 18	71.774, 44	12,707 8	6,3539	22,077	0	14,814	1,1463 9
1	1,064 42	6,68866	32,78 65	63.885, 67	14,099 7	7,0498 9	22,3429	0	13,534 7	1,1488 9
1	1,249 31	7,93407	34,83 99	56.577, 86	15,663 3	7,8316 6	22,5874	0	12,397 4	1,1511 8
1	1,471 17	9,43419	37,01 26	49.876, 84	17,401 7	8,7009 1	22,8096	0	11,405	1,1532 5
1	1,737 4	11,2424	39,29 82	43.788, 08	19,314	9,6570 3	23,009	0	10,555 8	1,1551
1	2,056 88	13,4235	41,70 07	38.299, 10	21,394 9	10,697 5	23,1859	0	9,8438 5	1,1567 2
1	2,440 26	16,0559	44,21 91	33.386, 78	23,636 2	11,818 1	23,341	0	9,2598 2	1,1581 4
1	2,900	19,2347	46,85	29.017,	26,029	13,014	23,4752	0	8,7917	1,1593

	31		81	75	3	7			2	7
1	3,452 37	23,0751	49,62 68	25.151, 65	28,569 1	14,284 6	23,59	0	8,4258 1	1,1604 1
1	3,668 41	24,5852	50,61 86	23.921, 22	29,483 4	14,741 8	23,6255	0	8,3202 2	1,1607 3
1	4,114 84	27,7197	52,51	21.748, 24	31,253 9	15,627 1	23,6868	0	8,1475	1,1612 8
1	4,909 81	33,3365	55,51 55	18.758, 30	34,095 7	17,048	23,7674	0	7,9420 9	1,1620 1
1	5,562 13	37,9722	57,74 74	16.875, 62	36,200 5	18,100 4	23,8148	0	7,8346 8	1,1624 3
2	13,19 55	0	1	999.99 9,41	0,7186 08	0,3593 04	-5,13685	0	300	0,7742 5
2	13,20 55	0,01503 44	3,161 78	687.51 2,24	1,1704 2	0,5852 12	2,96939	0	169,69 5	0,9124 26
2	13,21 55	0,04365 16	4,645 42	569.57 5,19	1,4693 5	0,7346 76	6,78045	0	131,80 4	0,9599 67
2	13,22 55	0,07883 7	5,854 46	500.29 9,00	1,7098	0,8549 02	8,92356	0	111,69 9	0,9875 15
2	13,23 55	0,11842 3	6,900 23	451.39 4,77	1,9234 4	0,9617 19	10,3679	0	98,354 3	1,0068 8
2	13,24 55	0,16134 5	7,829 39	412.63 3,19	2,1283 4	1,0641 7	11,4738	0	88,238 2	1,0221 9
2	13,25 55	0,20690 8	8,668 67	380.41 4,74	2,3300 9	1,1650 5	12,3679	0	80,123	1,0348 9
2	13,26 55	0,25466 1	9,433 65	353.00 0,35	2,5304 6	1,2652 3	13,111	0	73,418 5	1,0456 8
2	13,27 55	0,30426 2	10,13 61	329.32 7,91	2,7300 3	1,3650 2	13,7399	0	67,772 3	1,0549 7
2	13,28 55	0,35541 2	10,78 69	309.13 4,44	2,9241 5	1,4620 7	14,2671	0	63,058 4	1,0628 9
2	13,29 55	0,40790 8	11,39 42	291.89 8,27	3,1109	1,5554 5	14,7285	0	59,108 1	1,0695 8
2	13,30 55	0,46157 4	11,96 48	276.98 9,13	3,2913 7	1,6456 8	15,2096	0	55,744 8	1,0750 7
2	13,31 55	0,51628 7	12,50 37	263.93 7,87	3,4658 7	1,7329 4	15,6331	0	52,841 1	1,0798 5

2	13,32 55	0,57193 5	13,01 5	252.36 4,16	3,6355	1,8177 5	16,0105	0	50,297 4	1,0840 6
2	13,33 55	0,62842 4	13,50 21	242.01 1,49	3,8007 7	1,9003 9	16,3495	0	48,047	1,0878 1
2	13,34 55	0,68565 7	13,96 86	232.66 4,87	3,9624	1,9812	16,6567	0	46,035 4	1,0911 8
2	13,35 55	0,74358	14,41 61	224.17 8,54	4,1206 1	2,0603	16,9366	0	44,225 6	1,0942 3
2	13,36 55	0,80212 4	14,84 7	216.42 2,18	4,2758 4	2,1379 2	17,1931	0	42,585 2	1,097
2	13,37 55	0,86125 1	15,26 21	209.30 1,84	4,4282 5	2,2141 3	17,4293	0	41,091	1,0995 4
2	13,38 55	0,92091 7	15,66 28	202.73 4,26	4,5781	2,2890 5	17,6477	0	39,722 8	1,1018 7
2	13,39 55	0,98108 5	16,04 98	196.65 2,53	4,7255 6	2,3627 8	17,8503	0	38,464 4	1,1040 2
2	13,40 75	1,0539	16,49 77	189.91 6,44	4,8996 2	2,4498 1	18,0753	0	37,080 2	1,1064
2	13,42 19	1,1421	17,01 33	182.53 4,97	5,1046 8	2,5523 4	18,3224	0	35,575 2	1,1089 9
2	13,43 92	1,24897	17,60 42	174.53 6,30	5,3458 4	2,6729 2	18,5908	0	33,958 6	1,1117 9
2	13,45 99	1,37852	18,27 85	165.97 1,27	5,6289 4	2,8144 7	18,879	0	32,244 2	1,1147 7
2	13,48 48	1,53566	19,04 2	156.91 7,16	5,9605	2,9802 5	19,1844	0	30,451 1	1,1179 1
2	13,51 47	1,72625	19,90 24	147.46 6,73	6,3480 7	3,1740 4	19,504	0	28,601 4	1,1211 6
2	13,55 05	1,95736	20,86 58	137.73 3,29	6,8000 6	3,4000 4	19,8339	0	26,720 7	1,1244 9
2	13,59 35	2,23743	21,93 87	127.83 5,92	7,3261 6	3,6630 9	20,1701	0	24,835 1	1,1278 6
2	13,64 51	2,57645	23,12 81	117.89 6,05	7,9374 8	3,9687 5	20,5083	0	22,970 8	1,1312 1
2	13,70 7	2,98643	24,43 35	108.05 1,81	8,6451 3	4,3225 7	20,8435	0	21,156 1	1,1345 1
2	13,78 13	3,48127	25,85 82	98.418, 68	9,4621 6	4,7310 9	21,1717	0	19,414	1,1377 1

2	13,87 05	4,07728	27,40 24	89.105, 51	10,402	5,2010 3	21,4888	0	17,765 8	1,1407 7
2	13,97 75	4,79348	29,06 92	80.199, 71	11,479 3	5,7396 6	21,7915	0	16,227 9	1,1436 7
2	14,10 59	5,65391	30,86 18	71.774, 44	12,707 8	6,3539	22,077	0	14,814	1,1463 9
2	14,25 99	6,68866	32,78 65	63.885, 67	14,099 7	7,0498 9	22,3429	0	13,534 7	1,1488 9
2	14,44 48	7,93407	34,83 99	56.577, 86	15,663 3	7,8316 6	22,5874	0	12,397 4	1,1511 8
2	14,66 67	9,43419	37,01 26	49.876, 84	17,401 7	8,7009 1	22,8096	0	11,405	1,1532 5
2	14,93 29	11,2424	39,29 82	43.788, 08	19,314	9,6570 3	23,009	0	10,555 8	1,1551
2	15,25 24	13,4235	41,70 07	38.299, 10	21,394 9	10,697 5	23,1859	0	9,8438 5	1,1567 2
2	15,63 58	16,0559	44,21 91	33.386, 78	23,636 2	11,818 1	23,341	0	9,2598 2	1,1581 4
2	16,09 58	19,2347	46,85 81	29.017, 75	26,029 3	13,014 7	23,4752	0	8,7917 2	1,1593 7
2	16,64 79	23,0751	49,62 68	25.151, 65	28,569 1	14,284 6	23,59	0	8,4258 1	1,1604 1
2	16,86 39	24,5852	50,61 86	23.921, 22	29,483 4	14,741 8	23,6255	0	8,3202 2	1,1607 3
2	17,31 04	27,7197	52,51 24	21.748, 24	31,253 9	15,627 1	23,6868	0	8,1475	1,1612 8
2	18,10 53	33,3365	55,51 55	18.758, 30	34,095 7	17,048	23,7674	0	7,9420 9	1,1620 1
2	18,75 76	37,9722	57,74 74	16.875, 62	36,200 5	18,100 4	23,8148	0	7,8346 8	1,1624 3

