**. // Model SP.C.V.1**

. // poisson model

**. glm MR `subpart\_violation\_count\_vars' `covariates' ib(freq).state ib(freq).time, family(poisson) link(log) vce(cl mineid) exposure(hours) iter(50) eform**

Iteration 0: log pseudolikelihood = -20746.121

Iteration 1: log pseudolikelihood = -19235.906

Iteration 2: log pseudolikelihood = -19223.645

Iteration 3: log pseudolikelihood = -19223.325

Iteration 4: log pseudolikelihood = -19223.28

Iteration 5: log pseudolikelihood = -19223.274

Iteration 6: log pseudolikelihood = -19223.273

Iteration 7: log pseudolikelihood = -19223.273

Iteration 8: log pseudolikelihood = -19223.273

Iteration 9: log pseudolikelihood = -19223.273

Generalized linear models No. of obs = 28,337

Optimization : ML Residual df = 27,938

Scale parameter = 1

Deviance = 21533.80116 (1/df) Deviance = .770771

Pearson = 337473.9471 (1/df) Pearson = 12.07939

Variance function: V(u) = u [Poisson]

Link function : g(u) = ln(u) [Log]

AIC = 1.384922

Log pseudolikelihood = -19223.27271 BIC = -264884.4

(Std. Err. adjusted for 1,544 clusters in mineid)

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| Robust

MR | IRR Std. Err. z P>|z| [95% Conf. Interval]

------------------+----------------------------------------------------------------

sp47\_41 | 1.083043 .0568813 1.52 0.129 .9771038 1.200468

sp48\_11 | 1.068452 .0616031 1.15 0.251 .9542841 1.196278

sp71\_701 | 2.82e-07 3.45e-07 -12.30 0.000 2.54e-08 3.12e-06

sp75\_1001 | .9287603 .3398173 -0.20 0.840 .4533815 1.902583

sp75\_1001\_1 | 1.161578 .2815959 0.62 0.537 .7222633 1.868104

sp75\_1003\_1 | .8470577 .1476195 -0.95 0.341 .6019651 1.191941

sp75\_1400\_1 | 1.020251 .2938147 0.07 0.944 .580197 1.794066

sp75\_1401 | .8733719 .1528808 -0.77 0.439 .6197253 1.230833

sp75\_1401\_1 | 1.288178 .9832361 0.33 0.740 .2885848 5.750136

sp75\_1403\_11 | 1.360747 .3249604 1.29 0.197 .8521217 2.172967

sp75\_1404\_1 | .9042078 .4056406 -0.22 0.822 .3753246 2.178359

sp75\_1405\_1 | .8123499 .1853039 -0.91 0.362 .5194895 1.270309

sp75\_1431 | 1.03e-07 1.04e-07 -15.82 0.000 1.40e-08 7.53e-07

sp75\_151 | 2.137272 .8625121 1.88 0.060 .969061 4.713772

sp75\_1721 | 1.35e-06 4.64e-07 -39.37 0.000 6.90e-07 2.65e-06

sp75\_1731 | 1.001631 .0061376 0.27 0.790 .9896735 1.013733

sp75\_1911 | .989847 .0185803 -0.54 0.587 .9540921 1.026942

sp75\_211 | 1.030043 .0310364 0.98 0.326 .9709744 1.092705

sp75\_341 | .9402648 .4087955 -0.14 0.887 .4010296 2.20457

sp75\_506\_1 | 1.002937 .0968873 0.03 0.976 .8299354 1.212

sp75\_510\_1 | 1.488623 1.322126 0.45 0.654 .261088 8.487551

sp75\_511 | 1.010817 .0546001 0.20 0.842 .9092729 1.123702

sp75\_511\_1 | .4628131 .1261998 -2.83 0.005 .2712066 .7897891

sp75\_512\_1 | 2.09505 .9735783 1.59 0.111 .8426314 5.208963

sp75\_513\_1 | 1.077605 .129763 0.62 0.535 .8510589 1.364456

sp75\_516\_1 | 1.265965 .2428737 1.23 0.219 .8691998 1.843841

sp75\_517\_1 | 1.263989 .2534718 1.17 0.243 .8531967 1.872568

sp75\_518\_1 | 1.006774 .0241785 0.28 0.779 .9604833 1.055296

sp75\_523\_1 | 1.00141 .0469547 0.03 0.976 .9134831 1.097801

sp75\_600\_1 | .7980151 .1434126 -1.26 0.209 .5611 1.134964

sp75\_601 | 1.01653 .0252032 0.66 0.508 .9683131 1.067147

sp75\_601\_1 | 1.007478 .0171234 0.44 0.661 .9744696 1.041604

sp75\_700\_1 | .7192833 .1837668 -1.29 0.197 .4359432 1.18678

sp75\_701 | 1.025125 .0142558 1.78 0.074 .9975614 1.05345

sp75\_701\_1 | .9187839 .0509579 -1.53 0.127 .8241453 1.02429

sp75\_702\_1 | 1.705107 .8190962 1.11 0.267 .6650482 4.371699

sp75\_703\_1 | .992436 .5172783 -0.01 0.988 .3573046 2.756554

sp75\_705\_1 | 1.022572 .1725759 0.13 0.895 .7345805 1.423469

sp75\_801 | 1.295097 .3837769 0.87 0.383 .7245445 2.314938

sp75\_811 | .9663306 .0536424 -0.62 0.537 .866711 1.0774

sp75\_821 | 1.097142 .0812545 1.25 0.211 .9489045 1.268536

sp75\_831 | .684795 .1423005 -1.82 0.068 .4557019 1.029059

sp75\_901 | .936356 .1098813 -0.56 0.575 .7439651 1.178499

sp75\_902\_1 | 1.367375 .2366984 1.81 0.071 .9739595 1.919704

sp77\_1111 | .7882075 .1486332 -1.26 0.207 .5446638 1.140651

sp77\_401 | 1.10022 .1061581 0.99 0.322 .9106441 1.329261

sp77\_403\_1 | 1.001247 .1823118 0.01 0.995 .7007297 1.430645

sp77\_411 | .5281393 .339466 -0.99 0.321 .1498413 1.86151

sp77\_501 | .9841896 .0827201 -0.19 0.850 .834711 1.160436

sp77\_502\_1 | 2.481603 .8367717 2.70 0.007 1.281491 4.805615

sp77\_503\_1 | 1.136459 .3432746 0.42 0.672 .628699 2.054303

sp77\_506\_1 | .9736314 .034026 -0.76 0.444 .9091743 1.042658

sp77\_508\_1 | 1.052885 .1975856 0.27 0.784 .7288584 1.520962

sp77\_511 | 1.029625 .2047155 0.15 0.883 .697331 1.520266

sp77\_601 | 1.333787 .2044577 1.88 0.060 .9876537 1.801225

sp77\_606\_1 | .5714771 .1693974 -1.89 0.059 .319658 1.021674

sp77\_700\_1 | 1.109972 .2937506 0.39 0.693 .6607609 1.864575

sp77\_701 | 1.023698 .0371812 0.64 0.519 .953358 1.099229

sp77\_701\_1 | .6558439 .1430402 -1.93 0.053 .4277131 1.005654

sp77\_704\_1 | 1.456102 .2938547 1.86 0.063 .9804184 2.162579

sp77\_800\_1 | 1.209907 .2430822 0.95 0.343 .8160884 1.79377

sp77\_801 | 1.929211 .9772886 1.30 0.195 .7147976 5.206867

sp77\_801\_1 | 4.36e-06 4.40e-06 -12.25 0.000 6.06e-07 .0000314

sp77\_807\_1 | .5460394 .2167256 -1.52 0.127 .2508291 1.188694

sp77\_900\_1 | 1.157877 .4595101 0.37 0.712 .5319346 2.520383

sp77\_901 | 1.07331 .1847994 0.41 0.681 .7658927 1.50412

sp77\_901\_1 | 1.15e-07 1.05e-07 -17.36 0.000 1.88e-08 6.96e-07

sp47\_42 | .9444447 .1401404 -0.39 0.700 .7061093 1.263226

sp75\_1100\_2 | 1.027324 .0083324 3.32 0.001 1.011122 1.043786

sp75\_1102 | 1.032093 .0824529 0.40 0.693 .8825055 1.207037

sp75\_1106\_2 | 1.036377 .043869 0.84 0.399 .9538652 1.126026

sp75\_1400\_2 | 1.161149 .2122585 0.82 0.414 .8114989 1.661453

sp75\_1402\_2 | .5457565 .158179 -2.09 0.037 .309237 .9631775

sp75\_1432 | .6350846 .1602076 -1.80 0.072 .3873521 1.041255

sp75\_1600\_2 | .9903127 .0307853 -0.31 0.754 .9317761 1.052527

sp75\_1912 | .9061562 .0684838 -1.30 0.192 .7813985 1.050833

sp75\_202 | 1.004484 .0047123 0.95 0.340 .9952902 1.013762

sp75\_212 | .9507384 .0417896 -1.15 0.250 .8722612 1.036276

sp75\_312 | 1.078281 .0459869 1.77 0.077 .9918125 1.172288

sp75\_342 | 1.01745 .0124256 1.42 0.157 .9933851 1.042097

sp75\_352 | .9522429 .0509329 -0.91 0.360 .8574707 1.05749

sp75\_382 | .8726975 .0648496 -1.83 0.067 .754417 1.009523

sp75\_512 | .9971518 .0062015 -0.46 0.647 .9850708 1.009381

sp75\_512\_2 | 1.0221 .0187142 1.19 0.233 .9860708 1.059445

sp75\_516\_2 | 1.072975 .034863 2.17 0.030 1.006775 1.143528

sp75\_523\_2 | .9914754 .0258997 -0.33 0.743 .9419906 1.04356

sp75\_601\_2 | 1.526886 .6512553 0.99 0.321 .6618322 3.522617

sp75\_602 | 1.007881 .044822 0.18 0.860 .9237513 1.099673

sp75\_701\_2 | .9337646 .0789098 -0.81 0.417 .7912337 1.101971

sp75\_702 | 1.466693 .8170789 0.69 0.492 .4922026 4.370534

sp75\_703\_2 | 1.23267 .2133578 1.21 0.227 .8780433 1.730525

sp75\_705\_2 | 1.15726 .1483196 1.14 0.254 .9001961 1.487732

sp75\_800\_2 | .7490821 .1521111 -1.42 0.155 .5031316 1.115263

sp75\_802 | .9869799 .2108527 -0.06 0.951 .6493255 1.500217

sp75\_803\_2 | 3.605775 .3585829 12.90 0.000 2.967217 4.381753

sp75\_812 | 1.432859 .2404725 2.14 0.032 1.031214 1.99094

sp75\_832 | .6429694 .3933727 -0.72 0.470 .1938295 2.132852

sp75\_900\_2 | 1.046936 .2056845 0.23 0.815 .7123446 1.538686

sp75\_902 | 1.001641 .0377061 0.04 0.965 .9303987 1.078338

sp75\_902\_2 | 1.053624 .0629323 0.87 0.382 .9372251 1.184479

sp77\_1112 | .9069833 .1145491 -0.77 0.440 .708101 1.161725

sp77\_1432 | 1.303717 .6260603 0.55 0.581 .5086585 3.341491

sp77\_1802 | .6148148 .2118567 -1.41 0.158 .312919 1.207971

sp77\_202 | .9468862 .0201177 -2.57 0.010 .9082658 .9871487

sp77\_402 | .9992789 .0357399 -0.02 0.984 .9316287 1.071842

sp77\_403\_2 | .7001377 .1668779 -1.50 0.135 .4388332 1.117037

sp77\_412 | 1.217125 .1029659 2.32 0.020 1.031159 1.436629

sp77\_502 | .9818739 .012725 -1.41 0.158 .9572475 1.007134

sp77\_502\_2 | .9735879 .0685533 -0.38 0.704 .8480852 1.117663

sp77\_512 | 1.018085 .0263739 0.69 0.489 .9676831 1.071111

sp77\_602 | 1.015141 .2289338 0.07 0.947 .6524748 1.579387

sp77\_701\_2 | .9697868 .1383965 -0.21 0.830 .7331669 1.282773

sp77\_702 | .6909683 .2753586 -0.93 0.354 .316406 1.508938

sp77\_800\_2 | .8572136 .1354534 -0.98 0.330 .6289059 1.168402

sp77\_802 | .5030707 .2139908 -1.62 0.106 .2185517 1.157988

sp77\_807\_2 | .6515215 .1907327 -1.46 0.143 .3670623 1.156426

sp77\_900\_2 | .9518045 .130194 -0.36 0.718 .7279724 1.244459

sp77\_902 | 1.097539 .1541335 0.66 0.508 .833453 1.445303

sp77\_902\_2 | .0036066 .0018203 -11.14 0.000 .0013411 .0096989

sp47\_43 | 2.481754 .8488868 2.66 0.008 1.269417 4.851915

sp72\_503 | .8939294 .0624129 -1.61 0.108 .779603 1.025021

sp75\_1106\_3 | 1.032669 .0139274 2.38 0.017 1.005729 1.06033

sp75\_1400\_3 | 1.062399 .0920725 0.70 0.485 .8964339 1.25909

sp75\_1403\_3 | .8662763 .1343677 -0.93 0.355 .6391856 1.174048

sp75\_1433 | 1.015165 .0906876 0.17 0.866 .8521118 1.20942

sp75\_153 | 1.397838 .4206818 1.11 0.266 .7749722 2.521317

sp75\_1903 | .9390189 .0392097 -1.51 0.132 .8652299 1.019101

sp75\_1913 | 1.045656 .107826 0.43 0.665 .8543077 1.279861

sp75\_503 | .9989891 .0053088 -0.19 0.849 .9886382 1.009448

sp75\_513 | .7963216 .1079673 -1.68 0.093 .6104927 1.038715

sp75\_523 | .9719335 .0453298 -0.61 0.542 .8870284 1.064966

sp75\_601\_3 | .9156239 .260667 -0.31 0.757 .5240713 1.59972

sp75\_603 | 1.030973 .0738678 0.43 0.670 .895901 1.18641

sp75\_701\_3 | 1.019689 .1002583 0.20 0.843 .8409601 1.236403

sp75\_703 | 1.018165 .0384001 0.48 0.633 .9456164 1.096279

sp75\_703\_3 | .933989 .0947724 -0.67 0.501 .7655435 1.139498

sp75\_705\_3 | 2.06e-07 2.13e-07 -14.92 0.000 2.73e-08 1.56e-06

sp75\_800\_3 | .9146958 .1247039 -0.65 0.513 .7002114 1.19488

sp75\_803 | 1.044473 .090087 0.50 0.614 .8820237 1.236843

sp75\_900\_3 | 1.022457 .0850949 0.27 0.790 .8685669 1.203614

sp75\_903 | 1.097506 .0529236 1.93 0.054 .9985284 1.206294

sp77\_103 | .4134118 .1331906 -2.74 0.006 .2198608 .7773526

sp77\_1103 | .9917234 .0275709 -0.30 0.765 .9391313 1.047261

sp77\_1403 | .9479699 .0958171 -0.53 0.597 .7776039 1.155662

sp77\_1433 | 1.110952 .2706927 0.43 0.666 .6891173 1.791009

sp77\_203 | 1.161535 .1783355 0.98 0.329 .8596936 1.569354

sp77\_403 | 1.358332 .3938176 1.06 0.291 .769519 2.397687

sp77\_413 | .6704158 .0692164 -3.87 0.000 .5475991 .820778

sp77\_503 | .9491968 .1716595 -0.29 0.773 .6659151 1.352987

sp77\_513 | .9711624 .0378975 -0.75 0.453 .899654 1.048355

sp77\_603 | 1.39971 .4696455 1.00 0.316 .7251599 2.701732

sp77\_701\_3 | .1975147 .0496459 -6.45 0.000 .1206833 .3232597

sp77\_703 | 1.361801 .4171188 1.01 0.313 .7471215 2.482197

sp77\_803 | 1.278652 .2959771 1.06 0.288 .8123063 2.012727

sp77\_807\_3 | 1.270291 .3165931 0.96 0.337 .7793983 2.070366

sp77\_902\_3 | 1.355095 .293225 1.40 0.160 .8867084 2.070898

sp77\_903 | .7837609 .2919393 -0.65 0.513 .3776797 1.626461

sp47\_44 | .9138034 .0913933 -0.90 0.367 .7511393 1.111693

sp48\_24 | .0479129 .0096204 -15.13 0.000 .0323251 .0710174

sp48\_4 | 1.551179 1.121192 0.61 0.544 .3761956 6.396028

sp75\_1103\_4 | 1.040305 .019502 2.11 0.035 1.002775 1.079239

sp75\_1104 | 1.033888 .0484054 0.71 0.477 .9432377 1.13325

sp75\_1106\_4 | 1.224472 .1236388 2.01 0.045 1.004617 1.492441

sp75\_1107\_14 | 2.199351 .742045 2.34 0.019 1.135286 4.260727

sp75\_1400\_4 | .8916447 .1363617 -0.75 0.453 .6607167 1.203285

sp75\_1403\_4 | .952642 .1546387 -0.30 0.765 .6930386 1.309489

sp75\_1404 | 1.622087 .4235052 1.85 0.064 .9723821 2.705899

sp75\_1434 | .8389659 .0815543 -1.81 0.071 .6934268 1.015051

sp75\_1914 | 1.014964 .008099 1.86 0.063 .9992133 1.030962

sp75\_214 | .9678559 .0338105 -0.94 0.350 .9038063 1.036445

sp75\_324 | 1.023858 .0758609 0.32 0.750 .8854655 1.183881

sp75\_344 | 1.101033 .0826576 1.28 0.200 .9503821 1.275564

sp75\_504 | .7962021 .1317514 -1.38 0.168 .5756664 1.101224

sp75\_514 | 1.050029 .0250263 2.05 0.041 1.002107 1.100244

sp75\_604 | 1.021998 .0098804 2.25 0.024 1.002815 1.041548

sp75\_701\_4 | 1.568944 .5735363 1.23 0.218 .7663831 3.211951

sp75\_703\_4 | 1.01e-06 8.40e-07 -16.63 0.000 1.99e-07 5.15e-06

sp75\_704 | .9330399 .1854438 -0.35 0.727 .6320071 1.377458

sp75\_800\_4 | 1.299362 .1049646 3.24 0.001 1.109095 1.52227

sp75\_804 | .9337964 .0596661 -1.07 0.284 .8238792 1.058378

sp75\_814 | 1.039114 .1199466 0.33 0.740 .8287195 1.302923

sp75\_834 | 2.02e-06 2.38e-06 -11.13 0.000 2.00e-07 .0000203

sp75\_900\_4 | 1.034044 .0178943 1.93 0.053 .9995602 1.069718

sp75\_902\_4 | 1.032255 .0555483 0.59 0.555 .9289271 1.147076

sp75\_904 | .9871085 .0111236 -1.15 0.250 .9655457 1.009153

sp77\_104 | .8602655 .7859784 -0.16 0.869 .1435275 5.1562

sp77\_1104 | 1.010766 .0121435 0.89 0.373 .9872432 1.034849

sp77\_1434 | .7958024 .1463489 -1.24 0.214 .5549685 1.141148

sp77\_204 | .9529661 .035025 -1.31 0.190 .8867326 1.024147

sp77\_314 | .4843394 .1928535 -1.82 0.069 .2219319 1.057012

sp77\_404 | .9657564 .0135247 -2.49 0.013 .9396088 .9926315

sp77\_504 | .9043194 .0384017 -2.37 0.018 .8321005 .9828063

sp77\_514 | .9002453 .1335808 -0.71 0.479 .6730655 1.204105

sp77\_604 | .8722921 .1559141 -0.76 0.445 .6144939 1.238244

sp77\_701\_4 | 1.115657 .1609892 0.76 0.448 .8408189 1.480332

sp77\_704 | .4380319 .2349875 -1.54 0.124 .1530624 1.253554

sp77\_804 | 3.695123 1.882185 2.57 0.010 1.361609 10.0278

sp77\_904 | .9712964 .0399267 -0.71 0.479 .896111 1.05279

sp48\_25 | .8526176 .1324254 -1.03 0.305 .6288526 1.156005

sp48\_5 | 1.02253 .1863624 0.12 0.903 .7153846 1.461547

sp75\_1106\_5 | 1.089197 .0594002 1.57 0.117 .9787807 1.212069

sp75\_1403\_5 | .9964004 .0184567 -0.19 0.846 .9608747 1.03324

sp75\_1405 | .9569085 .0228248 -1.85 0.065 .9132024 1.002706

sp75\_1435 | 1.095963 .2507842 0.40 0.689 .6998732 1.716218

sp75\_155 | .7262288 .1668622 -1.39 0.164 .4629103 1.139331

sp75\_1725 | 1.004912 .0062956 0.78 0.434 .9926488 1.017328

sp75\_1915 | .9800528 .0939821 -0.21 0.834 .8121262 1.182702

sp75\_505 | .634086 .1861665 -1.55 0.121 .3566457 1.127351

sp75\_515 | .9624825 .0134254 -2.74 0.006 .9365257 .9891587

sp75\_605 | .9838633 .0266628 -0.60 0.548 .9329688 1.037534

sp75\_701\_5 | .8992786 .097742 -0.98 0.329 .7267377 1.112784

sp75\_705 | 1.075477 .3255371 0.24 0.810 .5942237 1.94649

sp75\_805 | 1.028397 .2182443 0.13 0.895 .678454 1.558838

sp75\_815 | .8707809 .1288203 -0.94 0.350 .6516061 1.163678

sp75\_825 | 1.045101 .1643776 0.28 0.779 .7678527 1.422455

sp75\_905 | .9529804 .1675358 -0.27 0.784 .6752134 1.345014

sp77\_1605 | .9758823 .0134535 -1.77 0.077 .9498669 1.00261

sp77\_1915 | .7287394 .1067537 -2.16 0.031 .5468635 .9711036

sp77\_205 | 1.001679 .0102735 0.16 0.870 .9817446 1.022019

sp77\_305 | 1.922126 1.023121 1.23 0.220 .6771721 5.455876

sp77\_315 | .4468756 .2652187 -1.36 0.175 .1396376 1.430115

sp77\_405 | .8706455 .1320638 -0.91 0.361 .6467358 1.172076

sp77\_505 | 1.027794 .0288293 0.98 0.328 .9728149 1.085881

sp77\_515 | .5347549 .2865001 -1.17 0.243 .1871179 1.528249

sp77\_605 | .6078835 .3156516 -0.96 0.338 .2196963 1.681969

sp77\_705 | 1.096552 .0889715 1.14 0.256 .93533 1.285564

sp77\_805 | 1.328219 .184805 2.04 0.041 1.011196 1.744631

sp48\_26 | 1.25019 .0795544 3.51 0.000 1.103598 1.416255

sp48\_6 | 1.033458 .0879466 0.39 0.699 .8746941 1.221039

sp75\_1106 | 1.028948 .093072 0.32 0.752 .8617856 1.228535

sp75\_1106\_6 | .9663744 .4755786 -0.07 0.945 .368338 2.535388

sp75\_1403\_6 | .9918942 .0111737 -0.72 0.470 .9702342 1.014038

sp75\_1436 | 1.756886 .7802992 1.27 0.204 .7356866 4.195601

sp75\_156 | 1.594695 .5946763 1.25 0.211 .7678151 3.312062

sp75\_1712\_6 | .9706838 .0541295 -0.53 0.594 .8701841 1.08279

sp75\_1726 | 1.016434 .11497 0.14 0.885 .814327 1.268702

sp75\_506 | 1.004914 .0590919 0.08 0.934 .8955214 1.127671

sp75\_516 | 1.014361 .022395 0.65 0.518 .9714039 1.059218

sp75\_606 | 1.016619 .0153942 1.09 0.276 .9868898 1.047243

sp75\_706 | .936416 .0888883 -0.69 0.489 .7774444 1.127894

sp75\_806 | 1.230377 .2882902 0.88 0.376 .7773074 1.947528

sp75\_816 | .9923985 .0390311 -0.19 0.846 .9187731 1.071924

sp77\_1106 | 3.79e-07 2.96e-07 -18.93 0.000 8.21e-08 1.75e-06

sp77\_1606 | 1.050927 .0204039 2.56 0.011 1.011687 1.091689

sp77\_1906 | 1.482741 .3480868 1.68 0.093 .9359185 2.349051

sp77\_1916 | 1.383001 .2316658 1.94 0.053 .9959514 1.920467

sp77\_206 | 1.055759 .0575491 1.00 0.320 .948781 1.174799

sp77\_216 | 1.007674 .0432199 0.18 0.859 .9264272 1.096046

sp77\_506 | .8282272 .0632111 -2.47 0.014 .7131566 .9618648

sp77\_516 | .9764021 .0222695 -1.05 0.295 .9337159 1.02104

sp77\_606 | 4.761358 1.437395 5.17 0.000 2.634897 8.603952

sp77\_906 | .2972429 .0532834 -6.77 0.000 .2091828 .4223737

sp48\_27 | 1.133146 .0982431 1.44 0.149 .9560643 1.343026

sp48\_7 | 1.08651 .0604961 1.49 0.136 .9741806 1.211792

sp75\_1403\_7 | .9712447 .0546928 -0.52 0.604 .8697526 1.08458

sp75\_1437 | 1.882971 .3470772 3.43 0.001 1.312039 2.702345

sp75\_1727 | 6.85e-07 5.06e-07 -19.22 0.000 1.61e-07 2.91e-06

sp75\_337 | 1.058762 .0448739 1.35 0.178 .9743645 1.150469

sp75\_507 | .9924992 .0609191 -0.12 0.902 .8800025 1.119377

sp75\_517 | .9935772 .0061094 -1.05 0.295 .9816748 1.005624

sp75\_607 | 1.003368 .0727577 0.05 0.963 .8704354 1.156601

sp75\_807 | 1.004681 .0123367 0.38 0.704 .9807898 1.029153

sp75\_827 | 1.360286 .2312263 1.81 0.070 .9748544 1.898106

sp75\_907 | .8831783 .0871789 -1.26 0.208 .7278233 1.071694

sp77\_1437 | .7036152 .1893689 -1.31 0.192 .4151885 1.192409

sp77\_207 | 1.119326 .0530612 2.38 0.017 1.020013 1.228309

sp77\_507 | .9271845 .1121671 -0.62 0.532 .7314609 1.17528

sp77\_807 | .9050538 .1458563 -0.62 0.536 .6599283 1.241229

sp48\_28 | 1.121891 .1074666 1.20 0.230 .9298509 1.353592

sp48\_8 | 1.125253 .1288689 1.03 0.303 .8990146 1.408424

sp75\_1403\_8 | .9771197 .014704 -1.54 0.124 .9487213 1.006368

sp75\_1438 | 8.02e-07 9.43e-07 -11.94 0.000 8.01e-08 8.04e-06

sp75\_1728 | 1.644094 .4909938 1.66 0.096 .915636 2.952095

sp75\_208 | .9944519 .0257696 -0.21 0.830 .9452056 1.046264

sp75\_518 | 1.037093 .0158072 2.39 0.017 1.006569 1.068542

sp75\_705\_8 | 1.089786 .4604127 0.20 0.839 .4761304 2.494347

sp75\_808 | 1.111348 .1155327 1.02 0.310 .9064867 1.362506

sp75\_818 | 1.097889 .1595222 0.64 0.520 .8258091 1.459611

sp77\_1438 | .4456331 .454712 -0.79 0.428 .0603163 3.29246

sp77\_208 | 1.061212 .0249906 2.52 0.012 1.013345 1.111341

sp77\_408 | .90719 .1368927 -0.65 0.519 .6749229 1.219389

sp77\_508 | .9327598 .1486208 -0.44 0.662 .6825651 1.274663

sp77\_704\_8 | 1.077938 .2143894 0.38 0.706 .7299608 1.591798

sp77\_808 | .7394266 .452667 -0.49 0.622 .2227414 2.454647

sp75\_1403\_9 | .8628829 .0392461 -3.24 0.001 .7892908 .9433365

sp75\_1729 | .6721882 .1499154 -1.78 0.075 .4341611 1.040713

sp75\_1909 | 1.012159 .0092378 1.32 0.185 .9942145 1.030428

sp75\_519 | .6133574 .2390127 -1.25 0.210 .2857709 1.316465

sp75\_809 | .9295958 .0346441 -1.96 0.050 .8641153 1.000038

sp75\_819 | .5337675 .1936299 -1.73 0.084 .2621619 1.086762

sp77\_309 | .7522186 .1411424 -1.52 0.129 .5207497 1.086573

sp77\_409 | .8688518 .1729658 -0.71 0.480 .5881574 1.283506

sp77\_509 | 1.014697 .0638937 0.23 0.817 .8968873 1.147982

sp77\_704\_9 | .5072975 .420732 -0.82 0.413 .0998414 2.577596

sp77\_809 | .8784128 .0611551 -1.86 0.063 .7663691 1.006837

sp72\_610 | 1.418842 .2538407 1.96 0.051 .99919 2.014744

sp72\_620 | 1.330324 .2961313 1.28 0.200 .8599619 2.057954

sp72\_630 | 1.007053 .0140786 0.50 0.615 .9798343 1.035028

sp75\_100 | 1.076635 .206046 0.39 0.700 .7398879 1.566647

sp75\_1101\_20 | .1396001 .1256302 -2.19 0.029 .0239257 .8145292

sp75\_1400 | .9024333 .0516741 -1.79 0.073 .8066305 1.009615

sp75\_1403\_10 | .9800988 .0153896 -1.28 0.200 .9503952 1.010731

sp75\_150 | .943358 .2094674 -0.26 0.793 .6104808 1.457743

sp75\_160 | 1.06512 .3740836 0.18 0.857 .5351134 2.120075

sp75\_1712\_10 | .8455644 .0745756 -1.90 0.057 .7113346 1.005124

sp75\_1720 | .9498899 .0472916 -1.03 0.302 .8615788 1.047253

sp75\_1730 | .8898824 .0852322 -1.22 0.223 .7375734 1.073643

sp75\_1910 | 1.011454 .0128067 0.90 0.368 .9866623 1.036869

sp75\_320 | .9718123 .0320813 -0.87 0.386 .910925 1.036769

sp75\_340 | 1.000403 .0131426 0.03 0.976 .9749724 1.026496

sp75\_520 | 1.025537 .0450537 0.57 0.566 .9409283 1.117754

sp75\_600 | 1.247308 .4057521 0.68 0.497 .6592891 2.35978

sp75\_700 | .9249053 .0502119 -1.44 0.150 .8315468 1.028745

sp75\_800 | 1.175277 .1243 1.53 0.127 .9552462 1.44599

sp75\_810 | 1.029703 .0541036 0.56 0.577 .9289393 1.141397

sp75\_820 | 1.305677 .1275216 2.73 0.006 1.078205 1.581139

sp75\_900 | 1.020727 .0353369 0.59 0.553 .953765 1.092389

sp77\_1710 | .9434801 .0289698 -1.89 0.058 .8883752 1.002003

sp77\_200 | 1.015892 .0221958 0.72 0.471 .9733072 1.06034

sp77\_210 | .93546 .0838534 -0.74 0.457 .7847378 1.115131

sp77\_400 | 1.003726 .0119793 0.31 0.755 .98052 1.027482

sp77\_410 | 1.014679 .0205506 0.72 0.472 .9751894 1.055767

sp77\_500 | 1.151841 .135761 1.20 0.230 .9142526 1.451172

sp77\_510 | .7059128 .1170917 -2.10 0.036 .5099879 .9771071

sp77\_600 | 1.188757 .1896246 1.08 0.278 .8695883 1.625072

sp77\_700 | .9086593 .1242422 -0.70 0.484 .6950486 1.187919

sp77\_800 | 1.270159 .2216514 1.37 0.171 .9022311 1.788128

sp77\_810 | 1.344878 .2192396 1.82 0.069 .9770606 1.851161

sp77\_900 | .7709528 .1548071 -1.30 0.195 .5201238 1.142744

mine\_time | .9988053 .00182 -0.66 0.512 .9952445 1.002379

onsite\_insp\_hours | .999632 .0001318 -2.79 0.005 .9993737 .9998904

|

state |

AL | 1.181313 .1080748 1.82 0.069 .9873952 1.413314

AR | 2.188893 .1231847 13.92 0.000 1.960294 2.444149

CO | .7342725 .1092894 -2.08 0.038 .5484842 .9829929

IL | 1.114393 .0903236 1.34 0.181 .9507078 1.306261

IN | .9037081 .1433769 -0.64 0.523 .6621886 1.233317

MD | 1.060966 .1819606 0.35 0.730 .7580823 1.484863

MT | .9110991 .0579849 -1.46 0.143 .8042531 1.03214

NM | .8273174 .0436956 -3.59 0.000 .7459593 .9175488

OH | 1.203457 .1203727 1.85 0.064 .9892163 1.464097

OK | .8671417 .2272541 -0.54 0.586 .5188161 1.449328

PA | 1.015311 .0908063 0.17 0.865 .8520603 1.20984

TN | 1.367975 .1819382 2.36 0.018 1.054071 1.77536

UT | .6239635 .0772323 -3.81 0.000 .4895534 .7952767

VA | .7186095 .0549094 -4.32 0.000 .6186601 .8347064

WV | 1.0383 .0534254 0.73 0.465 .9386954 1.148474

WY | 1.130591 .0719159 1.93 0.054 .9980706 1.280707

|

time |

2000 | 1.105738 .1201611 0.92 0.355 .8936176 1.36821

2000.25 | 1.191444 .1310825 1.59 0.111 .9603387 1.478164

2000.5 | 1.414227 .1398821 3.50 0.000 1.165001 1.71677

2000.75 | 1.086001 .1182362 0.76 0.449 .8773187 1.344321

2001 | 1.084636 .1079149 0.82 0.414 .8924717 1.318176

2001.5 | 1.293007 .1386941 2.40 0.017 1.047844 1.595529

2001.75 | 1.025655 .1037681 0.25 0.802 .8411686 1.250603

2002 | 1.072173 .1176258 0.64 0.525 .8647313 1.329377

2002.25 | .9813664 .1060356 -0.17 0.862 .7940718 1.212837

2002.5 | 1.190771 .1314209 1.58 0.114 .9591449 1.478332

2002.75 | 1.084944 .1171488 0.76 0.450 .8780059 1.340656

2003 | .8834247 .1019488 -1.07 0.283 .7045946 1.107643

2003.25 | .9905452 .1099116 -0.09 0.932 .7969376 1.231188

2003.5 | 1.081662 .1218786 0.70 0.486 .8673228 1.348971

2003.75 | .8015401 .0908464 -1.95 0.051 .6418747 1.000922

2004 | 1.038044 .1138863 0.34 0.734 .8371985 1.287073

2004.25 | .9631793 .1073578 -0.34 0.736 .7741598 1.19835

2004.5 | 1.020614 .1142461 0.18 0.855 .8195568 1.270995

2004.75 | .8829562 .0945943 -1.16 0.245 .7157261 1.08926

2005 | .7550182 .0809408 -2.62 0.009 .6119352 .9315569

2005.25 | .9881321 .098016 -0.12 0.904 .8135449 1.200186

2005.5 | .861669 .0984217 -1.30 0.192 .6888337 1.07787

2005.75 | .7951659 .09178 -1.99 0.047 .6341762 .9970238

2006 | .7982748 .0856281 -2.10 0.036 .6469147 .9850489

2006.25 | .8146378 .0983948 -1.70 0.090 .6429148 1.032228

2006.5 | .9240923 .1038991 -0.70 0.483 .7413301 1.151911

2006.75 | .7294541 .0878662 -2.62 0.009 .5760587 .9236962

2007 | .7804375 .086706 -2.23 0.026 .6277263 .9702998

2007.25 | .7002514 .0943701 -2.64 0.008 .5377011 .9119416

2007.5 | .7805754 .0886742 -2.18 0.029 .624766 .9752418

2007.75 | .7824654 .0941528 -2.04 0.041 .6180754 .9905784

2008 | .6755003 .0797965 -3.32 0.001 .5358873 .8514861

2008.25 | .6666912 .0760943 -3.55 0.000 .5330537 .8338318

2008.5 | .7745941 .0935933 -2.11 0.035 .6112579 .9815758

2008.75 | .6292031 .0753236 -3.87 0.000 .4976124 .7955922

2009 | .6321102 .0785479 -3.69 0.000 .495473 .8064279

2009.25 | .5805747 .0694802 -4.54 0.000 .4591882 .7340499

2009.5 | .7391922 .0879299 -2.54 0.011 .5854684 .9332785

2009.75 | .5507889 .0635347 -5.17 0.000 .4393365 .6905151

2010 | .5952192 .0755156 -4.09 0.000 .4641783 .7632538

2010.25 | .6090425 .0775242 -3.90 0.000 .4745689 .7816205

2010.5 | .6807192 .0808787 -3.24 0.001 .539304 .8592159

2010.75 | .5535837 .0686935 -4.77 0.000 .434069 .7060051

2011 | .6314525 .0770826 -3.77 0.000 .4970876 .8021369

2011.25 | .614502 .0754331 -3.97 0.000 .4830968 .7816502

2011.5 | .7140252 .088983 -2.70 0.007 .5592878 .9115736

2011.75 | .587475 .0739423 -4.23 0.000 .4590428 .7518403

2012 | .7172813 .0897799 -2.65 0.008 .5612382 .9167096

2012.25 | .6090274 .0771236 -3.92 0.000 .4751665 .7805988

2012.5 | .6559495 .0826945 -3.34 0.001 .5123429 .8398081

2012.75 | .5812175 .0773286 -4.08 0.000 .4478058 .7543756

2013 | .621255 .0808183 -3.66 0.000 .4814356 .8016812

2013.25 | .526002 .0729918 -4.63 0.000 .4007454 .6904087

2013.5 | .6941439 .0925864 -2.74 0.006 .5344591 .901539

2013.75 | .5748869 .0745672 -4.27 0.000 .445836 .7412927

2014 | .5427035 .0798143 -4.16 0.000 .4067973 .7240144

2014.25 | .5707602 .0766842 -4.17 0.000 .4386226 .7427051

2014.5 | .5842871 .076981 -4.08 0.000 .4513141 .7564387

2014.75 | .60217 .0791009 -3.86 0.000 .4654848 .7789916

2015 | .5849511 .0766291 -4.09 0.000 .4524925 .7561844

2015.25 | .6096244 .0919449 -3.28 0.001 .4536096 .8192991

2015.5 | .7661554 .107213 -1.90 0.057 .5823752 1.007931

2015.75 | .4781376 .0773674 -4.56 0.000 .3481929 .6565772

2016 | .6361218 .093995 -3.06 0.002 .4761728 .8497986

|

\_cons | .0000142 1.22e-06 -129.70 0.000 .000012 .0000168

ln(hours) | 1 (exposure)

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.

**. quietly poisson MR `subpart\_violation\_count\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) exposure(hours) iter(50) irr**

. est store pois

. estat gof

Deviance goodness-of-fit = 21533.8

Prob > chi2(27939) = 1.0000

Pearson goodness-of-fit = 337473.4

Prob > chi2(27939) = 0.0000

. // negative binomial model

**. glm MR `subpart\_violation\_count\_vars' `covariates' ib(freq).state ib(freq).time, family(nbinomial) link(log) vce(cl mineid) exposure(hours) iter(50) eform**

Iteration 0: log pseudolikelihood = -19909.128

Iteration 1: log pseudolikelihood = -19619.999

Iteration 2: log pseudolikelihood = -19618.597

Iteration 3: log pseudolikelihood = -19618.318

Iteration 4: log pseudolikelihood = -19618.274

Iteration 5: log pseudolikelihood = -19618.269

Iteration 6: log pseudolikelihood = -19618.268

Iteration 7: log pseudolikelihood = -19618.268

Iteration 8: log pseudolikelihood = -19618.268

Iteration 9: log pseudolikelihood = -19618.268

Generalized linear models No. of obs = 28,337

Optimization : ML Residual df = 27,936

Scale parameter = 1

Deviance = 14953.39869 (1/df) Deviance = .5352734

Pearson = 302785.4899 (1/df) Pearson = 10.83854

Variance function: V(u) = u+(1)u^2 [Neg. Binomial]

Link function : g(u) = ln(u) [Log]

AIC = 1.412942

Log pseudolikelihood = -19618.26797 BIC = -271444.3

(Std. Err. adjusted for 1,544 clusters in mineid)

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| Robust

MR | IRR Std. Err. z P>|z| [95% Conf. Interval]

------------------+----------------------------------------------------------------

sp47\_41 | 1.094587 .0676241 1.46 0.144 .969756 1.235486

sp48\_11 | 1.119903 .0775352 1.64 0.102 .9777962 1.282662

sp71\_701 | 1.88e-07 2.36e-07 -12.35 0.000 1.61e-08 2.20e-06

sp75\_1001 | .9046267 .3901925 -0.23 0.816 .3884371 2.106774

sp75\_1001\_1 | 1.193685 .3998429 0.53 0.597 .6191085 2.301508

sp75\_1003\_1 | .8046735 .1376187 -1.27 0.204 .5754977 1.125112

sp75\_1400\_1 | .8095901 .2577494 -0.66 0.507 .4337784 1.510993

sp75\_1401 | .766686 .1916725 -1.06 0.288 .4696951 1.251466

sp75\_1401\_1 | .9973333 .9207739 -0.00 0.998 .1632979 6.091162

sp75\_1403\_11 | 1.313328 .3708944 0.97 0.334 .7550701 2.284333

sp75\_1404\_1 | 1.254947 .8536843 0.33 0.739 .3308194 4.760578

sp75\_1405\_1 | .997133 .3459345 -0.01 0.993 .5051804 1.968157

sp75\_1431 | 9.67e-08 9.93e-08 -15.72 0.000 1.29e-08 7.24e-07

sp75\_151 | 4.239981 3.080198 1.99 0.047 1.020929 17.60889

sp75\_1721 | 1.22e-06 4.18e-07 -39.84 0.000 6.25e-07 2.39e-06

sp75\_1731 | .998297 .006348 -0.27 0.789 .9859324 1.010817

sp75\_1911 | .9946724 .0189101 -0.28 0.779 .9582913 1.032435

sp75\_211 | 1.011501 .0305183 0.38 0.705 .9534209 1.07312

sp75\_341 | .9819424 .4188178 -0.04 0.966 .4256295 2.265376

sp75\_506\_1 | 1.116487 .1223363 1.01 0.315 .9007104 1.383955

sp75\_510\_1 | .8563555 .9685564 -0.14 0.891 .0933097 7.859253

sp75\_511 | 1.06488 .0672612 1.00 0.320 .9408839 1.205217

sp75\_511\_1 | .4643697 .1408222 -2.53 0.011 .256291 .8413845

sp75\_512\_1 | 1.909004 .823071 1.50 0.134 .819992 4.444308

sp75\_513\_1 | 1.140917 .1344741 1.12 0.263 .9055806 1.437411

sp75\_516\_1 | 1.550551 .3904906 1.74 0.082 .9464977 2.54011

sp75\_517\_1 | 1.51963 .3088551 2.06 0.039 1.02032 2.263284

sp75\_518\_1 | 1.012733 .0282488 0.45 0.650 .9588523 1.069641

sp75\_523\_1 | .9866915 .0468848 -0.28 0.778 .8989483 1.082999

sp75\_600\_1 | .8691907 .2345139 -0.52 0.603 .5122179 1.474944

sp75\_601 | 1.025684 .0269787 0.96 0.335 .9741466 1.079948

sp75\_601\_1 | 1.001369 .0179395 0.08 0.939 .966818 1.037154

sp75\_700\_1 | .6720211 .2185853 -1.22 0.222 .3552355 1.271304

sp75\_701 | 1.026619 .0159981 1.69 0.092 .9957375 1.058459

sp75\_701\_1 | .936237 .0638401 -0.97 0.334 .8191135 1.070108

sp75\_702\_1 | 2.533896 1.537862 1.53 0.126 .7712247 8.32524

sp75\_703\_1 | 1.552046 .9996771 0.68 0.495 .4391806 5.484864

sp75\_705\_1 | 1.089267 .2228269 0.42 0.676 .7294698 1.626526

sp75\_801 | 1.385756 .4117459 1.10 0.272 .7740545 2.480858

sp75\_811 | .9850755 .0595357 -0.25 0.804 .8750338 1.108956

sp75\_821 | 1.090072 .1023198 0.92 0.358 .9068949 1.310247

sp75\_831 | .7442161 .2002157 -1.10 0.272 .4392394 1.260947

sp75\_901 | .9917585 .1346389 -0.06 0.951 .7600614 1.294086

sp75\_902\_1 | 1.196352 .2533871 0.85 0.397 .7899043 1.811938

sp77\_1111 | .7560638 .1395413 -1.52 0.130 .5265725 1.085572

sp77\_401 | 1.091795 .1041749 0.92 0.357 .905571 1.316313

sp77\_403\_1 | 1.025346 .1998363 0.13 0.898 .6998004 1.502334

sp77\_411 | .5458882 .321102 -1.03 0.303 .1723497 1.729008

sp77\_501 | 1.044328 .1209722 0.37 0.708 .8322156 1.310502

sp77\_502\_1 | 2.231285 1.080214 1.66 0.097 .8639127 5.762888

sp77\_503\_1 | 1.362625 .3979463 1.06 0.289 .7687557 2.415264

sp77\_506\_1 | .9665554 .03831 -0.86 0.391 .8943117 1.044635

sp77\_508\_1 | 1.276798 .3534895 0.88 0.377 .742099 2.19676

sp77\_511 | .9216452 .1944832 -0.39 0.699 .6094603 1.393741

sp77\_601 | 1.274379 .2651957 1.17 0.244 .8475498 1.91616

sp77\_606\_1 | .5820633 .1905618 -1.65 0.098 .3064045 1.10572

sp77\_700\_1 | 1.127331 .3185968 0.42 0.672 .6478758 1.961601

sp77\_701 | 1.018635 .0434789 0.43 0.665 .9368847 1.107518

sp77\_701\_1 | .7147725 .1985715 -1.21 0.227 .4146627 1.232085

sp77\_704\_1 | 1.37417 .3210738 1.36 0.174 .8692764 2.172316

sp77\_800\_1 | 1.15933 .2722878 0.63 0.529 .7316248 1.83707

sp77\_801 | 1.42935 .7153363 0.71 0.475 .5359741 3.811827

sp77\_801\_1 | 4.58e-06 4.61e-06 -12.20 0.000 6.34e-07 .000033

sp77\_807\_1 | .4875039 .2002525 -1.75 0.080 .2179361 1.090503

sp77\_900\_1 | 1.466258 .9212119 0.61 0.542 .4279789 5.023406

sp77\_901 | 1.086178 .1924271 0.47 0.641 .7675422 1.537091

sp77\_901\_1 | 8.79e-08 8.12e-08 -17.58 0.000 1.44e-08 5.38e-07

sp47\_42 | .8761877 .1549497 -0.75 0.455 .6195354 1.239162

sp75\_1100\_2 | 1.028975 .0095536 3.08 0.002 1.01042 1.047871

sp75\_1102 | 1.024188 .0759133 0.32 0.747 .8857031 1.184326

sp75\_1106\_2 | 1.063883 .0517658 1.27 0.203 .9671118 1.170338

sp75\_1400\_2 | 1.110253 .2555206 0.45 0.650 .7071656 1.743102

sp75\_1402\_2 | .5145933 .1790188 -1.91 0.056 .2602225 1.017615

sp75\_1432 | .767163 .2455071 -0.83 0.408 .4097195 1.436444

sp75\_1600\_2 | .971425 .0334595 -0.84 0.400 .9080101 1.039269

sp75\_1912 | .8941887 .0846867 -1.18 0.238 .7427005 1.076576

sp75\_202 | 1.003251 .0048994 0.66 0.506 .9936946 1.0129

sp75\_212 | .9170882 .0444708 -1.78 0.074 .8339408 1.008526

sp75\_312 | 1.088926 .0456439 2.03 0.042 1.003042 1.182164

sp75\_342 | 1.011088 .0117187 0.95 0.341 .9883784 1.034319

sp75\_352 | .9169678 .0594927 -1.34 0.182 .8074736 1.04131

sp75\_382 | .882758 .074207 -1.48 0.138 .7486648 1.040869

sp75\_512 | .9988341 .0063163 -0.18 0.854 .9865307 1.011291

sp75\_512\_2 | 1.03318 .0226854 1.49 0.137 .9896609 1.078614

sp75\_516\_2 | 1.068636 .0349532 2.03 0.042 1.002279 1.139387

sp75\_523\_2 | 1.001306 .0335847 0.04 0.969 .9375984 1.069343

sp75\_601\_2 | 1.922638 1.058325 1.19 0.235 .6536566 5.655164

sp75\_602 | 1.01836 .0552479 0.34 0.737 .9156344 1.132611

sp75\_701\_2 | .9117963 .0839291 -1.00 0.316 .7612833 1.092067

sp75\_702 | 1.381539 .8642749 0.52 0.605 .4053792 4.70831

sp75\_703\_2 | 1.144565 .2298142 0.67 0.501 .7722007 1.696489

sp75\_705\_2 | 1.165292 .1651807 1.08 0.281 .8826254 1.538484

sp75\_800\_2 | .684206 .1540963 -1.69 0.092 .4400276 1.063883

sp75\_802 | .8612158 .1718574 -0.75 0.454 .5824424 1.273418

sp75\_803\_2 | 3.406826 .3809557 10.96 0.000 2.736324 4.241626

sp75\_812 | 1.586531 .3509402 2.09 0.037 1.028403 2.447564

sp75\_832 | .5765066 .3665032 -0.87 0.386 .1658323 2.004193

sp75\_900\_2 | 1.065123 .2760366 0.24 0.808 .6409189 1.770095

sp75\_902 | .9794248 .0372265 -0.55 0.584 .9091136 1.055174

sp75\_902\_2 | 1.079465 .0870903 0.95 0.343 .9215824 1.264394

sp77\_1112 | .9072672 .1282088 -0.69 0.491 .6877796 1.196799

sp77\_1432 | 1.278655 .4934698 0.64 0.524 .6001369 2.72431

sp77\_1802 | .5565198 .2378354 -1.37 0.170 .2408294 1.286032

sp77\_202 | .9353122 .0220482 -2.84 0.005 .8930816 .9795396

sp77\_402 | 1.008 .0434226 0.18 0.853 .9263871 1.096803

sp77\_403\_2 | .7915835 .2079379 -0.89 0.374 .4730402 1.324633

sp77\_412 | 1.283881 .1276589 2.51 0.012 1.056545 1.560133

sp77\_502 | .9850741 .016493 -0.90 0.369 .9532731 1.017936

sp77\_502\_2 | .9537517 .0679342 -0.66 0.506 .8294795 1.096642

sp77\_512 | 1.022794 .0310515 0.74 0.458 .9637091 1.0855

sp77\_602 | 1.100755 .3735813 0.28 0.777 .5659839 2.140804

sp77\_701\_2 | .8708311 .1284765 -0.94 0.349 .6521589 1.162825

sp77\_702 | .97654 .7955988 -0.03 0.977 .1977907 4.821411

sp77\_800\_2 | .8470226 .1349652 -1.04 0.297 .6198177 1.157514

sp77\_802 | .5146817 .2753036 -1.24 0.214 .1803975 1.468409

sp77\_807\_2 | .6253009 .2222649 -1.32 0.187 .3115496 1.255021

sp77\_900\_2 | .9824618 .1514236 -0.11 0.909 .7263112 1.32895

sp77\_902 | 1.188474 .1902689 1.08 0.281 .8683936 1.626533

sp77\_902\_2 | .0035984 .0018175 -11.14 0.000 .0013371 .0096839

sp47\_43 | 2.684604 1.016949 2.61 0.009 1.277728 5.640559

sp72\_503 | .888026 .0670782 -1.57 0.116 .7658242 1.029727

sp75\_1106\_3 | 1.040949 .0157999 2.64 0.008 1.010438 1.072381

sp75\_1400\_3 | 1.029769 .0822308 0.37 0.713 .8805788 1.204235

sp75\_1403\_3 | 1.016645 .1711814 0.10 0.922 .730878 1.414143

sp75\_1433 | 1.028022 .0920993 0.31 0.758 .8624708 1.225351

sp75\_153 | 1.023889 .3464744 0.07 0.944 .5274901 1.987428

sp75\_1903 | .9604905 .0481122 -0.80 0.421 .8706735 1.059573

sp75\_1913 | 1.079858 .1174694 0.71 0.480 .872511 1.336479

sp75\_503 | 1.006039 .0055733 1.09 0.277 .995175 1.017022

sp75\_513 | .7722486 .0844781 -2.36 0.018 .6232212 .9569122

sp75\_523 | .9665564 .0437499 -0.75 0.452 .8845018 1.056223

sp75\_601\_3 | 1.058916 .3385203 0.18 0.858 .5659068 1.981429

sp75\_603 | 1.03231 .0897795 0.37 0.715 .8705261 1.224162

sp75\_701\_3 | .9879845 .1188752 -0.10 0.920 .7804278 1.250741

sp75\_703 | 1.045133 .0431439 1.07 0.285 .9639029 1.133208

sp75\_703\_3 | .8858242 .0946478 -1.13 0.257 .7184541 1.092184

sp75\_705\_3 | 1.90e-07 1.99e-07 -14.80 0.000 2.45e-08 1.48e-06

sp75\_800\_3 | .9885755 .1737578 -0.07 0.948 .7004831 1.395154

sp75\_803 | 1.088226 .1202516 0.77 0.444 .8763131 1.351385

sp75\_900\_3 | 1.025163 .1116569 0.23 0.820 .8281008 1.26912

sp75\_903 | 1.104572 .0550536 2.00 0.046 1.001772 1.217921

sp77\_103 | .3176121 .1291471 -2.82 0.005 .143147 .7047121

sp77\_1103 | .9718785 .0299211 -0.93 0.354 .9149685 1.032328

sp77\_1403 | .9216014 .101153 -0.74 0.457 .7432194 1.142797

sp77\_1433 | 1.28238 .5087862 0.63 0.531 .5892524 2.790823

sp77\_203 | 1.257604 .2598344 1.11 0.267 .8388351 1.885433

sp77\_403 | 1.696155 .5277769 1.70 0.089 .921733 3.121232

sp77\_413 | .6554711 .0766849 -3.61 0.000 .5211585 .8243987

sp77\_503 | .9114154 .1633985 -0.52 0.605 .6413765 1.295149

sp77\_513 | .9775623 .0458766 -0.48 0.629 .8916571 1.071744

sp77\_603 | 1.498316 .5664722 1.07 0.285 .714147 3.143543

sp77\_701\_3 | .1757952 .0548845 -5.57 0.000 .0953358 .324159

sp77\_703 | 1.369483 .5875127 0.73 0.464 .5907294 3.174863

sp77\_803 | .9994664 .2286674 -0.00 0.998 .6382962 1.564999

sp77\_807\_3 | 1.020009 .3183455 0.06 0.949 .5532779 1.880462

sp77\_902\_3 | 1.299897 .324456 1.05 0.293 .7969805 2.120166

sp77\_903 | .8090109 .2888101 -0.59 0.553 .4018672 1.628644

sp47\_44 | .9195155 .09417 -0.82 0.413 .7522899 1.123913

sp48\_24 | .0474114 .0095201 -15.18 0.000 .0319862 .0702753

sp48\_4 | 1.435972 .9900525 0.52 0.600 .371768 5.546509

sp75\_1103\_4 | 1.038792 .0213037 1.86 0.063 .9978654 1.081397

sp75\_1104 | 1.048023 .0548825 0.90 0.370 .9457916 1.161305

sp75\_1106\_4 | 1.088621 .1176663 0.79 0.432 .8807903 1.345491

sp75\_1107\_14 | 2.124012 .8178782 1.96 0.050 .9985988 4.517759

sp75\_1400\_4 | .8915348 .1333403 -0.77 0.443 .6650133 1.195216

sp75\_1403\_4 | .9852884 .2269745 -0.06 0.949 .6273033 1.547566

sp75\_1404 | 1.69074 .6015882 1.48 0.140 .8417982 3.39583

sp75\_1434 | .8744123 .1066063 -1.10 0.271 .6885569 1.110434

sp75\_1914 | 1.00718 .0112327 0.64 0.521 .9854037 1.029438

sp75\_214 | 1.000548 .0466299 0.01 0.991 .9132051 1.096245

sp75\_324 | .9567807 .0830712 -0.51 0.611 .807064 1.134271

sp75\_344 | 1.145223 .1081445 1.44 0.151 .9517222 1.378065

sp75\_504 | .7101376 .1190611 -2.04 0.041 .5112469 .9864028

sp75\_514 | 1.046833 .0263222 1.82 0.069 .9964928 1.099716

sp75\_604 | 1.023266 .0101133 2.33 0.020 1.003635 1.043281

sp75\_701\_4 | 1.712121 .6657516 1.38 0.167 .7990024 3.668773

sp75\_703\_4 | 6.76e-07 6.03e-07 -15.92 0.000 1.18e-07 3.88e-06

sp75\_704 | 1.014968 .1719125 0.09 0.930 .7282463 1.414577

sp75\_800\_4 | 1.246783 .1227791 2.24 0.025 1.027939 1.512218

sp75\_804 | .8745519 .0646316 -1.81 0.070 .7566232 1.010861

sp75\_814 | .9911764 .1445871 -0.06 0.952 .7447022 1.319226

sp75\_834 | 2.28e-06 2.72e-06 -10.91 0.000 2.21e-07 .0000236

sp75\_900\_4 | 1.034344 .0276197 1.26 0.206 .9816028 1.08992

sp75\_902\_4 | 1.020833 .0625669 0.34 0.737 .9052834 1.151131

sp75\_904 | .9770342 .0124972 -1.82 0.069 .9528446 1.001838

sp77\_104 | .9742784 .8655901 -0.03 0.977 .1707811 5.558101

sp77\_1104 | 1.010396 .0127143 0.82 0.411 .985781 1.035625

sp77\_1434 | .9019287 .2204484 -0.42 0.673 .5586277 1.456203

sp77\_204 | .9663947 .0445899 -0.74 0.459 .8828353 1.057863

sp77\_314 | .4412115 .2311047 -1.56 0.118 .1580488 1.231693

sp77\_404 | .9595759 .0152028 -2.60 0.009 .9302368 .9898403

sp77\_504 | .9328467 .0540012 -1.20 0.230 .8327897 1.044925

sp77\_514 | .7610864 .1294467 -1.61 0.108 .5453312 1.062203

sp77\_604 | .8550837 .1940389 -0.69 0.490 .5480886 1.334033

sp77\_701\_4 | .8331721 .1526325 -1.00 0.319 .5818344 1.193081

sp77\_704 | .2747322 .1543984 -2.30 0.022 .0913141 .8265736

sp77\_804 | 4.398416 1.610166 4.05 0.000 2.146296 9.013698

sp77\_904 | .9467459 .0420612 -1.23 0.218 .8677947 1.03288

sp48\_25 | .7816473 .1104421 -1.74 0.081 .5925721 1.031052

sp48\_5 | 1.21664 .2404847 0.99 0.321 .8258687 1.79231

sp75\_1106\_5 | 1.062599 .0680662 0.95 0.343 .9372266 1.204743

sp75\_1403\_5 | .9969871 .0235169 -0.13 0.898 .951944 1.044161

sp75\_1405 | .9527215 .0266512 -1.73 0.083 .9018923 1.006415

sp75\_1435 | .7403529 .2340946 -0.95 0.342 .3983773 1.375888

sp75\_155 | .7641217 .1740989 -1.18 0.238 .4889036 1.194268

sp75\_1725 | 1.008019 .0071175 1.13 0.258 .9941654 1.022066

sp75\_1915 | .9874539 .1278824 -0.10 0.922 .7660906 1.272781

sp75\_505 | .740974 .2409219 -0.92 0.357 .3917793 1.401408

sp75\_515 | .9591158 .0139724 -2.87 0.004 .9321176 .9868959

sp75\_605 | .9897785 .0290688 -0.35 0.726 .9344135 1.048424

sp75\_701\_5 | .8575393 .1057468 -1.25 0.213 .6734243 1.091992

sp75\_705 | 1.505129 .4678685 1.32 0.188 .8184239 2.76802

sp75\_805 | .8488521 .2013205 -0.69 0.490 .5332787 1.351169

sp75\_815 | .8411277 .1345002 -1.08 0.279 .6148241 1.150729

sp75\_825 | .9394088 .1552617 -0.38 0.705 .6794718 1.298787

sp75\_905 | .9930071 .2135037 -0.03 0.974 .6515352 1.513446

sp77\_1605 | .9795816 .0154867 -1.30 0.192 .9496937 1.01041

sp77\_1915 | .7545893 .1512497 -1.40 0.160 .5094434 1.1177

sp77\_205 | 1.010839 .0145592 0.75 0.454 .9827027 1.039781

sp77\_305 | 1.86622 1.140225 1.02 0.307 .5635013 6.180604

sp77\_315 | .552394 .4015768 -0.82 0.414 .132876 2.29642

sp77\_405 | 1.091516 .1696017 0.56 0.573 .8049504 1.480101

sp77\_505 | 1.027582 .035876 0.78 0.436 .9596183 1.10036

sp77\_515 | .5283389 .2631288 -1.28 0.200 .199062 1.402287

sp77\_605 | .5782139 .3682346 -0.86 0.390 .1659595 2.014535

sp77\_705 | 1.106631 .1064416 1.05 0.292 .9164948 1.336214

sp77\_805 | 1.213325 .2193438 1.07 0.285 .8513293 1.729245

sp48\_26 | 1.278619 .1018851 3.08 0.002 1.093741 1.494748

sp48\_6 | .9891857 .0830145 -0.13 0.897 .8391571 1.166037

sp75\_1106 | 1.062108 .1084121 0.59 0.555 .8695291 1.297337

sp75\_1106\_6 | .6685171 .3403145 -0.79 0.429 .2464909 1.81311

sp75\_1403\_6 | .9936163 .0142555 -0.45 0.655 .9660652 1.021953

sp75\_1436 | 2.247124 1.64346 1.11 0.268 .5359091 9.422433

sp75\_156 | 2.116006 .8302309 1.91 0.056 .980712 4.565541

sp75\_1712\_6 | .9732297 .0526555 -0.50 0.616 .8753103 1.082103

sp75\_1726 | 1.106018 .1480614 0.75 0.452 .8507713 1.437844

sp75\_506 | .9694822 .062955 -0.48 0.633 .8536219 1.101068

sp75\_516 | 1.009755 .0215372 0.46 0.649 .9684134 1.052862

sp75\_606 | 1.017602 .0178083 1.00 0.319 .9832899 1.053111

sp75\_706 | .893127 .0921733 -1.10 0.273 .7295695 1.093351

sp75\_806 | 1.173079 .3109553 0.60 0.547 .6977406 1.972243

sp75\_816 | 1.012119 .0471607 0.26 0.796 .9237811 1.108905

sp77\_1106 | 3.36e-07 2.65e-07 -18.92 0.000 7.18e-08 1.57e-06

sp77\_1606 | 1.045002 .0218506 2.11 0.035 1.003041 1.088718

sp77\_1906 | 1.220557 .2810699 0.87 0.387 .7772188 1.916782

sp77\_1916 | 1.295112 .3121812 1.07 0.283 .807475 2.077236

sp77\_206 | 1.018236 .0576179 0.32 0.749 .9113444 1.137666

sp77\_216 | 1.021576 .0576749 0.38 0.705 .9145649 1.141108

sp77\_506 | .8110774 .0707048 -2.40 0.016 .6836908 .9621989

sp77\_516 | .9865577 .0227779 -0.59 0.558 .9429089 1.032227

sp77\_606 | 4.335468 1.609372 3.95 0.000 2.094406 8.974516

sp77\_906 | .2920963 .0625021 -5.75 0.000 .1920383 .4442877

sp48\_27 | 1.165927 .1197638 1.49 0.135 .9533139 1.425957

sp48\_7 | 1.13328 .087257 1.62 0.104 .9745387 1.31788

sp75\_1403\_7 | .9377304 .0565292 -1.07 0.286 .8332301 1.055337

sp75\_1437 | 1.51549 .3888133 1.62 0.105 .9165777 2.505745

sp75\_1727 | 6.29e-07 4.69e-07 -19.16 0.000 1.46e-07 2.71e-06

sp75\_337 | 1.057647 .0518154 1.14 0.253 .960814 1.164239

sp75\_507 | 1.003159 .0657977 0.05 0.962 .8821434 1.140777

sp75\_517 | .9908074 .006892 -1.33 0.184 .977391 1.004408

sp75\_607 | 1.012787 .0870816 0.15 0.883 .8557163 1.198688

sp75\_807 | 1.016169 .013941 1.17 0.242 .9892088 1.043863

sp75\_827 | 1.178204 .239315 0.81 0.419 .791272 1.754346

sp75\_907 | .8031008 .0874762 -2.01 0.044 .6487159 .994227

sp77\_1437 | .6275968 .2204799 -1.33 0.185 .3152439 1.249438

sp77\_207 | 1.129752 .0535478 2.57 0.010 1.029528 1.239733

sp77\_507 | .8547131 .1145787 -1.17 0.242 .6572225 1.111548

sp77\_807 | .8649465 .1394851 -0.90 0.368 .6305517 1.186473

sp48\_28 | 1.185632 .1221779 1.65 0.098 .9688013 1.450993

sp48\_8 | 1.186205 .1506677 1.34 0.179 .9247901 1.521516

sp75\_1403\_8 | .9765606 .0136133 -1.70 0.089 .9502402 1.00361

sp75\_1438 | 6.78e-07 8.44e-07 -11.40 0.000 5.89e-08 7.79e-06

sp75\_1728 | 2.269391 .7223948 2.57 0.010 1.216058 4.23511

sp75\_208 | .9884325 .0253345 -0.45 0.650 .9400044 1.039356

sp75\_518 | 1.052371 .0203598 2.64 0.008 1.013214 1.093042

sp75\_705\_8 | 1.103795 .4452473 0.24 0.807 .5006471 2.433576

sp75\_808 | 1.122714 .1292282 1.01 0.315 .8959691 1.406842

sp75\_818 | 1.109211 .2697182 0.43 0.670 .6887064 1.786464

sp77\_1438 | .4754172 .4074477 -0.87 0.386 .0886274 2.550244

sp77\_208 | 1.059503 .0270434 2.26 0.024 1.007803 1.113855

sp77\_408 | 1.048937 .1844906 0.27 0.786 .7430832 1.480682

sp77\_508 | .9230081 .1667831 -0.44 0.657 .6477352 1.315266

sp77\_704\_8 | .950537 .2045471 -0.24 0.814 .6234448 1.449239

sp77\_808 | .7587409 .4688381 -0.45 0.655 .2260073 2.547209

sp75\_1403\_9 | .868972 .035364 -3.45 0.001 .8023521 .9411234

sp75\_1729 | .5856492 .1167556 -2.68 0.007 .3962243 .8656333

sp75\_1909 | 1.012807 .0098591 1.31 0.191 .9936667 1.032316

sp75\_519 | .6154125 .2400255 -1.24 0.213 .2865349 1.321768

sp75\_809 | .9396563 .0440078 -1.33 0.184 .857243 1.029993

sp75\_819 | .3930235 .1660585 -2.21 0.027 .171701 .8996309

sp77\_309 | .8331426 .1703431 -0.89 0.372 .5580639 1.243812

sp77\_409 | .8103801 .2150824 -0.79 0.428 .4816948 1.363344

sp77\_509 | .9946226 .0669856 -0.08 0.936 .8716293 1.134971

sp77\_704\_9 | .7567135 .7971645 -0.26 0.791 .0959904 5.965337

sp77\_809 | .837681 .0675716 -2.20 0.028 .7151818 .9811623

sp72\_610 | 1.221574 .289528 0.84 0.398 .7676705 1.94386

sp72\_620 | 1.054122 .3240508 0.17 0.864 .5770597 1.925579

sp72\_630 | 1.016847 .0143687 1.18 0.237 .9890708 1.045402

sp75\_100 | 1.093492 .2350442 0.42 0.678 .7175485 1.666402

sp75\_1101\_20 | .1391433 .1247878 -2.20 0.028 .0239927 .8069469

sp75\_1400 | .9066487 .061016 -1.46 0.145 .7946109 1.034483

sp75\_1403\_10 | .972519 .0221679 -1.22 0.222 .9300269 1.016952

sp75\_150 | .9511199 .316035 -0.15 0.880 .4959077 1.824189

sp75\_160 | .8864334 .3246037 -0.33 0.742 .4324581 1.816972

sp75\_1712\_10 | .8540437 .0803203 -1.68 0.093 .710276 1.026912

sp75\_1720 | .9610541 .0546691 -0.70 0.485 .8596619 1.074405

sp75\_1730 | .8455104 .0819667 -1.73 0.083 .6991985 1.022439

sp75\_1910 | 1.017668 .0138907 1.28 0.199 .9908039 1.045261

sp75\_320 | .9736516 .0329932 -0.79 0.431 .9110868 1.040513

sp75\_340 | 1.002112 .0150152 0.14 0.888 .9731111 1.031978

sp75\_520 | 1.06111 .0457809 1.37 0.169 .97507 1.154742

sp75\_600 | 1.324179 .5614319 0.66 0.508 .576833 3.039788

sp75\_700 | .9261948 .0558413 -1.27 0.203 .8229671 1.042371

sp75\_800 | 1.176497 .1458498 1.31 0.190 .9227157 1.500079

sp75\_810 | 1.005932 .0589794 0.10 0.920 .8967291 1.128433

sp75\_820 | 1.319006 .2022206 1.81 0.071 .9766668 1.78134

sp75\_900 | 1.009748 .0370374 0.26 0.791 .9397041 1.085013

sp77\_1710 | .9333417 .0331087 -1.94 0.052 .8706543 1.000543

sp77\_200 | 1.023221 .0222839 1.05 0.292 .9804641 1.067842

sp77\_210 | .8994611 .0924642 -1.03 0.303 .7353248 1.100235

sp77\_400 | 1.00154 .0138115 0.11 0.911 .9748321 1.028979

sp77\_410 | 1.001729 .0223612 0.08 0.938 .9588471 1.046529

sp77\_500 | 1.066279 .152987 0.45 0.655 .8049015 1.412535

sp77\_510 | .7263861 .1372897 -1.69 0.091 .5015189 1.052078

sp77\_600 | 1.080677 .2258724 0.37 0.710 .7174411 1.627817

sp77\_700 | .8641754 .1514544 -0.83 0.405 .6129447 1.218379

sp77\_800 | 1.361137 .5488068 0.76 0.444 .6175896 2.999881

sp77\_810 | 1.240913 .2443806 1.10 0.273 .8435461 1.825465

sp77\_900 | .755686 .1394267 -1.52 0.129 .5263707 1.084903

mine\_time | .9992493 .0016254 -0.46 0.644 .9960686 1.00244

onsite\_insp\_hours | .9996254 .0001367 -2.74 0.006 .9993575 .9998934

|

state |

AL | 1.235648 .1294184 2.02 0.043 1.006334 1.517215

AR | 2.123961 .119162 13.43 0.000 1.902791 2.370839

CO | .7784831 .1132404 -1.72 0.085 .5853706 1.035303

IL | 1.174612 .0952254 1.99 0.047 1.002047 1.376896

IN | .9465001 .1505065 -0.35 0.730 .6930554 1.292627

MD | 1.10886 .1923131 0.60 0.551 .7893143 1.55777

MT | .9517524 .0733843 -0.64 0.521 .8182623 1.10702

NM | .8749497 .0462903 -2.53 0.012 .7887679 .9705478

OH | 1.07959 .1438645 0.57 0.566 .8314364 1.401808

OK | .893067 .2521114 -0.40 0.689 .51356 1.553019

PA | 1.102814 .0904878 1.19 0.233 .9389875 1.295224

TN | 1.478705 .2015873 2.87 0.004 1.131983 1.931626

UT | .6604329 .0864379 -3.17 0.002 .5110024 .8535608

VA | .762857 .0512021 -4.03 0.000 .6688233 .8701114

WV | 1.132595 .0535714 2.63 0.008 1.032316 1.242614

WY | 1.206907 .0834333 2.72 0.007 1.053975 1.382029

|

time |

2000 | 1.059216 .1294369 0.47 0.638 .8336183 1.345867

2000.25 | 1.069654 .1261213 0.57 0.568 .8489444 1.347743

2000.5 | 1.371768 .1595582 2.72 0.007 1.092126 1.723014

2000.75 | .9845624 .1189105 -0.13 0.898 .7770329 1.247519

2001 | 1.000629 .1150974 0.01 0.996 .7986634 1.253669

2001.5 | 1.16345 .1334275 1.32 0.187 .9292442 1.456686

2001.75 | .9836895 .1112596 -0.15 0.884 .7881037 1.227814

2002 | .9768389 .1204752 -0.19 0.849 .7670838 1.24395

2002.25 | .8956274 .104334 -0.95 0.344 .7128017 1.125346

2002.5 | 1.123796 .1379095 0.95 0.342 .8835481 1.429371

2002.75 | 1.04928 .1308717 0.39 0.700 .8217221 1.339855

2003 | .8656485 .1110781 -1.12 0.261 .6731584 1.113181

2003.25 | .955339 .1249213 -0.35 0.727 .7393557 1.234416

2003.5 | 1.050924 .1333964 0.39 0.696 .8194569 1.347772

2003.75 | .7152022 .0897891 -2.67 0.008 .5591984 .9147276

2004 | .9994034 .1294614 -0.00 0.996 .7753133 1.288263

2004.25 | .8690789 .1075636 -1.13 0.257 .6818805 1.107669

2004.5 | .9375468 .1187219 -0.51 0.611 .7314842 1.201658

2004.75 | .7995937 .0979068 -1.83 0.068 .6289894 1.016472

2005 | .7056533 .0899196 -2.74 0.006 .549699 .9058532

2005.25 | .9176191 .1033392 -0.76 0.445 .7358732 1.144253

2005.5 | .7610974 .0955578 -2.17 0.030 .5950722 .9734436

2005.75 | .7421023 .0987559 -2.24 0.025 .571728 .963248

2006 | .7720052 .0948371 -2.11 0.035 .6068121 .9821689

2006.25 | .8026361 .1067159 -1.65 0.098 .6185085 1.041578

2006.5 | .8625101 .1066824 -1.20 0.232 .6768315 1.099127

2006.75 | .684874 .0887407 -2.92 0.003 .5312739 .8828824

2007 | .6962875 .0872768 -2.89 0.004 .5446205 .890191

2007.25 | .6559402 .0899761 -3.07 0.002 .5013073 .8582712

2007.5 | .7457157 .0954613 -2.29 0.022 .580241 .9583807

2007.75 | .7106017 .0917747 -2.65 0.008 .5516873 .9152917

2008 | .6020419 .0768426 -3.98 0.000 .4687942 .7731634

2008.25 | .6397871 .0809277 -3.53 0.000 .4993046 .8197952

2008.5 | .7013849 .0910189 -2.73 0.006 .5438709 .9045176

2008.75 | .5654299 .0747472 -4.31 0.000 .4363691 .7326619

2009 | .5440596 .0705892 -4.69 0.000 .4218975 .7015942

2009.25 | .5336874 .0700912 -4.78 0.000 .4125679 .6903645

2009.5 | .6419342 .0844244 -3.37 0.001 .4960714 .8306859

2009.75 | .4927061 .0648012 -5.38 0.000 .3807476 .637586

2010 | .5264064 .0727145 -4.65 0.000 .4015518 .6900822

2010.25 | .5527099 .0709734 -4.62 0.000 .4297289 .7108859

2010.5 | .6735503 .0919568 -2.89 0.004 .5154177 .8801987

2010.75 | .5142673 .0695772 -4.92 0.000 .3944813 .6704267

2011 | .6232646 .0821972 -3.58 0.000 .4812986 .8071056

2011.25 | .579191 .0759085 -4.17 0.000 .4479852 .7488243

2011.5 | .6685401 .086788 -3.10 0.002 .5183544 .8622398

2011.75 | .5293387 .0720274 -4.67 0.000 .4054246 .6911258

2012 | .6451298 .0830483 -3.40 0.001 .5012691 .8302775

2012.25 | .5538052 .0732286 -4.47 0.000 .4273703 .7176452

2012.5 | .6465436 .0888627 -3.17 0.002 .4938628 .8464265

2012.75 | .5085722 .0699523 -4.92 0.000 .3883943 .6659359

2013 | .5331178 .0725464 -4.62 0.000 .408312 .6960723

2013.25 | .4512953 .0658184 -5.46 0.000 .339093 .6006241

2013.5 | .5824608 .0805786 -3.91 0.000 .4441299 .7638769

2013.75 | .5162981 .0737482 -4.63 0.000 .3902245 .6831033

2014 | .4457806 .0661764 -5.44 0.000 .333242 .5963243

2014.25 | .5035936 .0715629 -4.83 0.000 .3811717 .665334

2014.5 | .5112454 .0732121 -4.68 0.000 .3861307 .6769

2014.75 | .5240359 .0745556 -4.54 0.000 .3965144 .6925691

2015 | .5226554 .0749108 -4.53 0.000 .3946527 .6921748

2015.25 | .5591267 .0870049 -3.74 0.000 .4121507 .7585156

2015.5 | .7007842 .0998105 -2.50 0.013 .530091 .926442

2015.75 | .4259141 .0686259 -5.30 0.000 .3105784 .5840806

2016 | .5685439 .0883147 -3.64 0.000 .4193172 .7708774

|

\_cons | .0000146 1.38e-06 -118.01 0.000 .0000121 .0000176

ln(hours) | 1 (exposure)

-----------------------------------------------------------------------------------

**. eststo: nbreg MR `subpart\_violation\_count\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) exposure(hours) iter(50) irr**

Fitting Poisson model:

Iteration 0: log pseudolikelihood = -163577.43

Iteration 1: log pseudolikelihood = -104661.63 (backed up)

Iteration 2: log pseudolikelihood = -84763.286 (backed up)

Iteration 3: log pseudolikelihood = -42698.461 (backed up)

Iteration 4: log pseudolikelihood = -30966.97

Iteration 5: log pseudolikelihood = -22674.577

Iteration 6: log pseudolikelihood = -19756.732

Iteration 7: log pseudolikelihood = -19325.682

Iteration 8: log pseudolikelihood = -19235.188

Iteration 9: log pseudolikelihood = -19223.596

Iteration 10: log pseudolikelihood = -19223.273

Iteration 11: log pseudolikelihood = -19223.273

Fitting constant-only model:

Iteration 0: log pseudolikelihood = -20107.698

Iteration 1: log pseudolikelihood = -19847.991

Iteration 2: log pseudolikelihood = -19841.286

Iteration 3: log pseudolikelihood = -19841.282

Iteration 4: log pseudolikelihood = -19841.282

Fitting full model:

Iteration 0: log pseudolikelihood = -19205.734

Iteration 1: log pseudolikelihood = -19146.173

Iteration 2: log pseudolikelihood = -19142.185

Iteration 3: log pseudolikelihood = -19142.127

Iteration 4: log pseudolikelihood = -19142.127

Negative binomial regression Number of obs = 28,337

Wald chi2(397) = .

Dispersion = mean Prob > chi2 = .

Log pseudolikelihood = -19142.127 Pseudo R2 = 0.0352

(Std. Err. adjusted for 1,544 clusters in mineid)

-----------------------------------------------------------------------------------

| Robust

MR | IRR Std. Err. z P>|z| [95% Conf. Interval]

------------------+----------------------------------------------------------------

sp47\_41 | 1.089416 .0603238 1.55 0.122 .9773732 1.214303

sp48\_11 | 1.087179 .0670381 1.36 0.175 .9634163 1.226841

sp71\_701 | 1.78e-12 2.20e-12 -21.96 0.000 1.59e-13 1.99e-11

sp75\_1001 | .9425556 .3629392 -0.15 0.878 .4431436 2.004793

sp75\_1001\_1 | 1.136211 .283733 0.51 0.609 .6964631 1.853616

sp75\_1003\_1 | .8392227 .143827 -1.02 0.306 .5997873 1.174241

sp75\_1400\_1 | .9449888 .2826262 -0.19 0.850 .5258359 1.698256

sp75\_1401 | .8377561 .1654991 -0.90 0.370 .5688036 1.23388

sp75\_1401\_1 | 1.21532 .9758476 0.24 0.808 .2518918 5.863641

sp75\_1403\_11 | 1.322044 .3322857 1.11 0.267 .8077978 2.163659

sp75\_1404\_1 | .963307 .4940496 -0.07 0.942 .3525417 2.632201

sp75\_1405\_1 | .8546783 .1964684 -0.68 0.495 .54467 1.341133

sp75\_1431 | 7.20e-13 7.34e-13 -27.42 0.000 9.76e-14 5.31e-12

sp75\_151 | 2.621584 1.32678 1.90 0.057 .9722368 7.068962

sp75\_1721 | 5.90e-10 2.03e-10 -61.81 0.000 3.01e-10 1.16e-09

sp75\_1731 | 1.000654 .0059945 0.11 0.913 .9889732 1.012472

sp75\_1911 | .9915409 .018344 -0.46 0.646 .9562313 1.028154

sp75\_211 | 1.022344 .0299452 0.75 0.451 .9653058 1.082753

sp75\_341 | .9552514 .4083563 -0.11 0.915 .4132769 2.207975

sp75\_506\_1 | 1.049699 .1069511 0.48 0.634 .8596821 1.281715

sp75\_510\_1 | 1.313777 1.256922 0.29 0.775 .2014449 8.568147

sp75\_511 | 1.027646 .0581723 0.48 0.630 .9197281 1.148228

sp75\_511\_1 | .4659356 .1306034 -2.72 0.006 .2689869 .8070875

sp75\_512\_1 | 2.009628 .8825531 1.59 0.112 .849767 4.752602

sp75\_513\_1 | 1.096064 .1288005 0.78 0.435 .8705814 1.379946

sp75\_516\_1 | 1.338007 .2918192 1.34 0.182 .8725922 2.05166

sp75\_517\_1 | 1.337207 .2647845 1.47 0.142 .9070885 1.971277

sp75\_518\_1 | 1.008183 .0248505 0.33 0.741 .9606345 1.058085

sp75\_523\_1 | .996509 .0463105 -0.08 0.940 .9097531 1.091538

sp75\_600\_1 | .8128811 .1602169 -1.05 0.293 .5524045 1.196181

sp75\_601 | 1.021993 .0252196 0.88 0.378 .9737396 1.072637

sp75\_601\_1 | 1.005203 .0168939 0.31 0.758 .9726305 1.038865

sp75\_700\_1 | .7034493 .1944037 -1.27 0.203 .4092575 1.209119

sp75\_701 | 1.025565 .0145571 1.78 0.075 .9974264 1.054497

sp75\_701\_1 | .9220854 .0535797 -1.40 0.163 .8228303 1.033313

sp75\_702\_1 | 1.907823 1.018585 1.21 0.226 .6700122 5.432423

sp75\_703\_1 | 1.129551 .6056216 0.23 0.820 .3949342 3.23063

sp75\_705\_1 | 1.051025 .1917509 0.27 0.785 .7350522 1.502823

sp75\_801 | 1.314898 .3790395 0.95 0.342 .7473434 2.313471

sp75\_811 | .9751504 .054517 -0.45 0.653 .873945 1.088076

sp75\_821 | 1.099058 .0853836 1.22 0.224 .943827 1.279819

sp75\_831 | .7130111 .1587848 -1.52 0.129 .4608261 1.103203

sp75\_901 | .9530989 .1196292 -0.38 0.702 .7452441 1.218926

sp75\_902\_1 | 1.327188 .2469551 1.52 0.128 .9216071 1.911256

sp77\_1111 | .7897146 .1451302 -1.28 0.199 .5508587 1.13214

sp77\_401 | 1.107879 .1078561 1.05 0.293 .9154293 1.340788

sp77\_403\_1 | 1.015874 .1893159 0.08 0.933 .7050374 1.463753

sp77\_411 | .5353007 .3307512 -1.01 0.312 .1594623 1.796957

sp77\_501 | 1.016874 .0934448 0.18 0.856 .8492718 1.217552

sp77\_502\_1 | 2.301971 .8837569 2.17 0.030 1.084707 4.885256

sp77\_503\_1 | 1.211705 .3545455 0.66 0.512 .6828648 2.150101

sp77\_506\_1 | .9730046 .034137 -0.78 0.435 .908346 1.042266

sp77\_508\_1 | 1.104607 .2335006 0.47 0.638 .7299177 1.671635

sp77\_511 | .9963962 .1993977 -0.02 0.986 .6731169 1.474937

sp77\_601 | 1.313219 .228052 1.57 0.117 .9343696 1.845678

sp77\_606\_1 | .5678183 .1721873 -1.87 0.062 .313392 1.0288

sp77\_700\_1 | 1.126262 .302788 0.44 0.658 .6649658 1.907564

sp77\_701 | 1.023062 .0384249 0.61 0.544 .9504558 1.101214

sp77\_701\_1 | .6757678 .1597293 -1.66 0.097 .4252081 1.073973

sp77\_704\_1 | 1.437009 .3033485 1.72 0.086 .9501088 2.17343

sp77\_800\_1 | 1.213906 .251755 0.93 0.350 .8084482 1.822711

sp77\_801 | 1.795886 .8597637 1.22 0.221 .7027067 4.589693

sp77\_801\_1 | 3.15e-11 3.17e-11 -24.01 0.000 4.37e-12 2.27e-10

sp77\_807\_1 | .5287238 .212514 -1.59 0.113 .240491 1.162408

sp77\_900\_1 | 1.168719 .5349442 0.34 0.733 .47654 2.866294

sp77\_901 | 1.07682 .1872681 0.43 0.670 .7657945 1.514169

sp77\_901\_1 | 2.22e-11 2.05e-11 -26.65 0.000 3.66e-12 1.35e-10

sp47\_42 | .9216457 .142873 -0.53 0.599 .6801603 1.248869

sp75\_1100\_2 | 1.027562 .0086659 3.22 0.001 1.010717 1.044688

sp75\_1102 | 1.029301 .0805691 0.37 0.712 .8829052 1.199971

sp75\_1106\_2 | 1.046473 .0457398 1.04 0.299 .9605577 1.140074

sp75\_1400\_2 | 1.125084 .2125822 0.62 0.533 .776877 1.629362

sp75\_1402\_2 | .5385429 .1643627 -2.03 0.043 .2960973 .9795039

sp75\_1432 | .6628218 .1802202 -1.51 0.130 .389006 1.129372

sp75\_1600\_2 | .9815488 .0300947 -0.61 0.544 .9243015 1.042342

sp75\_1912 | .9009745 .0716501 -1.31 0.190 .77094 1.052942

sp75\_202 | 1.003898 .0046387 0.84 0.400 .9948478 1.013031

sp75\_212 | .9394671 .042828 -1.37 0.171 .8591667 1.027273

sp75\_312 | 1.082748 .0459062 1.88 0.061 .9964101 1.176566

sp75\_342 | 1.016839 .0119216 1.42 0.154 .9937392 1.040475

sp75\_352 | .9425155 .0532319 -1.05 0.295 .8437501 1.052842

sp75\_382 | .8804778 .0686108 -1.63 0.102 .7557687 1.025765

sp75\_512 | .9969686 .006042 -0.50 0.616 .9851966 1.008881

sp75\_512\_2 | 1.026103 .0195998 1.35 0.177 .9883983 1.065246

sp75\_516\_2 | 1.073529 .0338874 2.25 0.025 1.009124 1.142045

sp75\_523\_2 | .9938318 .0278738 -0.22 0.825 .9406745 1.049993

sp75\_601\_2 | 1.630581 .7393901 1.08 0.281 .6704453 3.965714

sp75\_602 | 1.010598 .0470217 0.23 0.821 .9225149 1.107092

sp75\_701\_2 | .9278511 .0789302 -0.88 0.379 .7853595 1.096196

sp75\_702 | 1.44121 .8338726 0.63 0.528 .4636911 4.47946

sp75\_703\_2 | 1.198649 .2111705 1.03 0.304 .8486579 1.692978

sp75\_705\_2 | 1.150075 .1501078 1.07 0.284 .8904867 1.485337

sp75\_800\_2 | .7250024 .1544012 -1.51 0.131 .4775974 1.100568

sp75\_802 | .9409321 .1926027 -0.30 0.766 .6299743 1.40538

sp75\_803\_2 | 3.536985 .3540887 12.62 0.000 2.906827 4.303753

sp75\_812 | 1.493893 .279081 2.15 0.032 1.035864 2.154449

sp75\_832 | .6204694 .3794884 -0.78 0.435 .1871168 2.057444

sp75\_900\_2 | 1.060108 .2271043 0.27 0.785 .6966255 1.613247

sp75\_902 | .992261 .0371678 -0.21 0.836 .9220233 1.067849

sp75\_902\_2 | 1.056751 .0684169 0.85 0.394 .9308158 1.199725

sp77\_1112 | .9044847 .1174771 -0.77 0.440 .7012045 1.166696

sp77\_1432 | 1.31188 .5843855 0.61 0.542 .5479247 3.140996

sp77\_1802 | .5960278 .2240264 -1.38 0.169 .2853179 1.245099

sp77\_202 | .9442871 .0198625 -2.73 0.006 .9061489 .9840304

sp77\_402 | 1.002882 .0364944 0.08 0.937 .9338455 1.077022

sp77\_403\_2 | .7329911 .1794613 -1.27 0.205 .4536233 1.18441

sp77\_412 | 1.239454 .1070242 2.49 0.013 1.04648 1.468013

sp77\_502 | .9821064 .0133378 -1.33 0.184 .9563097 1.008599

sp77\_502\_2 | .9625529 .0655319 -0.56 0.575 .8423133 1.099957

sp77\_512 | 1.019237 .0278856 0.70 0.486 .9660219 1.075384

sp77\_602 | 1.034434 .2642327 0.13 0.895 .6270096 1.706597

sp77\_701\_2 | .9405659 .1358702 -0.42 0.671 .7086441 1.24839

sp77\_702 | .7243115 .3676192 -0.64 0.525 .2678576 1.958604

sp77\_800\_2 | .8510824 .1347778 -1.02 0.309 .6239861 1.160829

sp77\_802 | .5030808 .2279919 -1.52 0.130 .2069572 1.222911

sp77\_807\_2 | .6438089 .1934717 -1.47 0.143 .3572412 1.160252

sp77\_900\_2 | .9579411 .1345244 -0.31 0.760 .7274513 1.26146

sp77\_902 | 1.141248 .1616219 0.93 0.351 .8646374 1.50635

sp77\_902\_2 | 9.66e-06 4.87e-06 -22.89 0.000 3.59e-06 .000026

sp47\_43 | 2.590687 .8879954 2.78 0.005 1.323285 5.071969

sp72\_503 | .8925671 .063919 -1.59 0.112 .7756829 1.027064

sp75\_1106\_3 | 1.035226 .0137037 2.62 0.009 1.008713 1.062437

sp75\_1400\_3 | 1.057081 .0869905 0.67 0.500 .8996222 1.242099

sp75\_1403\_3 | .9205851 .1320175 -0.58 0.564 .6950186 1.219358

sp75\_1433 | 1.027313 .0895286 0.31 0.757 .8660078 1.218662

sp75\_153 | 1.297644 .4028581 0.84 0.401 .70615 2.384592

sp75\_1903 | .9486618 .042273 -1.18 0.237 .8693234 1.035241

sp75\_1913 | 1.056332 .1076474 0.54 0.591 .8650822 1.289863

sp75\_503 | 1.001506 .0053449 0.28 0.778 .9910846 1.012037

sp75\_513 | .7897308 .0961619 -1.94 0.053 .6220598 1.002596

sp75\_523 | .9719873 .0442275 -0.62 0.532 .8890559 1.062655

sp75\_601\_3 | .9510337 .2889686 -0.17 0.869 .5242772 1.725166

sp75\_603 | 1.029637 .0770961 0.39 0.696 .8890959 1.192393

sp75\_701\_3 | .9981685 .1037444 -0.02 0.986 .8142063 1.223695

sp75\_703 | 1.024827 .0385418 0.65 0.514 .9520035 1.103222

sp75\_703\_3 | .9237312 .0938967 -0.78 0.435 .7568703 1.127378

sp75\_705\_3 | 1.45e-12 1.50e-12 -26.31 0.000 1.90e-13 1.10e-11

sp75\_800\_3 | .9274404 .1376387 -0.51 0.612 .6933646 1.240539

sp75\_803 | 1.04811 .0959734 0.51 0.608 .8759188 1.254151

sp75\_900\_3 | 1.018416 .0914062 0.20 0.839 .8541362 1.214293

sp75\_903 | 1.102324 .0536247 2.00 0.045 1.002077 1.2126

sp77\_103 | .3925874 .1363099 -2.69 0.007 .1987887 .7753204

sp77\_1103 | .9863703 .0275706 -0.49 0.623 .9337865 1.041915

sp77\_1403 | .9371999 .0966881 -0.63 0.530 .7656254 1.147224

sp77\_1433 | 1.133728 .3213491 0.44 0.658 .65049 1.975957

sp77\_203 | 1.189486 .1943114 1.06 0.288 .8635932 1.63836

sp77\_403 | 1.471571 .4516093 1.26 0.208 .8064109 2.68538

sp77\_413 | .6662065 .0715101 -3.78 0.000 .5398108 .8221975

sp77\_503 | .9352668 .1640691 -0.38 0.703 .6631527 1.319039

sp77\_513 | .970546 .0398043 -0.73 0.466 .8955842 1.051782

sp77\_603 | 1.420664 .5110167 0.98 0.329 .7019589 2.875218

sp77\_701\_3 | .1957643 .0523103 -6.10 0.000 .1159534 .3305092

sp77\_703 | 1.381998 .4659444 0.96 0.337 .7137113 2.676039

sp77\_803 | 1.165875 .2543196 0.70 0.482 .7602809 1.787845

sp77\_807\_3 | 1.188641 .3227657 0.64 0.525 .6980938 2.023893

sp77\_902\_3 | 1.35146 .3064558 1.33 0.184 .8665336 2.107758

sp77\_903 | .7936287 .2957107 -0.62 0.535 .3823444 1.647328

sp47\_44 | .9152566 .0896952 -0.90 0.366 .7553097 1.109074

sp48\_24 | .0044634 .000896 -26.96 0.000 .0030116 .006615

sp48\_4 | 1.513928 1.078219 0.58 0.560 .374869 6.114077

sp75\_1103\_4 | 1.040011 .0199726 2.04 0.041 1.001593 1.079903

sp75\_1104 | 1.038036 .0496484 0.78 0.435 .945149 1.140052

sp75\_1106\_4 | 1.179042 .118233 1.64 0.100 .9686607 1.435115

sp75\_1107\_14 | 2.162871 .7700296 2.17 0.030 1.076426 4.345873

sp75\_1400\_4 | .8822181 .1310997 -0.84 0.399 .6593035 1.180502

sp75\_1403\_4 | .9663111 .1758347 -0.19 0.851 .6764382 1.380403

sp75\_1404 | 1.66478 .483995 1.75 0.080 .9416515 2.943224

sp75\_1434 | .8485282 .086183 -1.62 0.106 .6953633 1.03543

sp75\_1914 | 1.013332 .0090942 1.48 0.140 .9956632 1.031313

sp75\_214 | .9758087 .0381019 -0.63 0.531 .9039163 1.053419

sp75\_324 | .9955383 .0779142 -0.06 0.954 .853965 1.160582

sp75\_344 | 1.118168 .0888705 1.41 0.160 .9568736 1.30665

sp75\_504 | .7710244 .1288475 -1.56 0.120 .5556766 1.069828

sp75\_514 | 1.049346 .0255578 1.98 0.048 1.00043 1.100653

sp75\_604 | 1.022179 .0097174 2.31 0.021 1.003309 1.041403

sp75\_701\_4 | 1.640667 .631595 1.29 0.198 .7715069 3.489

sp75\_703\_4 | 9.46e-10 8.10e-10 -24.27 0.000 1.77e-10 5.07e-09

sp75\_704 | .9603212 .1803798 -0.22 0.829 .6645581 1.387714

sp75\_800\_4 | 1.279998 .1093182 2.89 0.004 1.082711 1.513234

sp75\_804 | .9188919 .0614481 -1.26 0.206 .8060146 1.047577

sp75\_814 | 1.024916 .129255 0.20 0.845 .8004626 1.312308

sp75\_834 | 1.49e-11 1.76e-11 -21.16 0.000 1.48e-12 1.50e-10

sp75\_900\_4 | 1.031959 .0202305 1.60 0.109 .9930603 1.072382

sp75\_902\_4 | 1.026638 .056552 0.48 0.633 .9215723 1.143683

sp75\_904 | .9842137 .0114126 -1.37 0.170 .9620978 1.006838

sp77\_104 | .8852679 .8148332 -0.13 0.895 .1457463 5.377148

sp77\_1104 | 1.010433 .0121019 0.87 0.386 .9869901 1.034433

sp77\_1434 | .8370115 .1656829 -0.90 0.369 .567858 1.233739

sp77\_204 | .9571252 .0369607 -1.13 0.256 .8873572 1.032379

sp77\_314 | .477507 .2055376 -1.72 0.086 .2053948 1.11012

sp77\_404 | .9624229 .0140185 -2.63 0.009 .9353356 .9902947

sp77\_504 | .9080295 .0401455 -2.18 0.029 .8326585 .9902228

sp77\_514 | .8584175 .1328745 -0.99 0.324 .6337836 1.162669

sp77\_604 | .8653838 .1684286 -0.74 0.458 .5909359 1.267293

sp77\_701\_4 | 1.006701 .1614796 0.04 0.967 .735129 1.378596

sp77\_704 | .3834725 .2071037 -1.77 0.076 .1330522 1.105214

sp77\_804 | 3.871382 1.751422 2.99 0.003 1.595073 9.396183

sp77\_904 | .9591023 .0394831 -1.01 0.310 .8847566 1.039695

sp48\_25 | .8275232 .1183781 -1.32 0.186 .625194 1.095331

sp48\_5 | 1.083432 .2009647 0.43 0.666 .7532049 1.55844

sp75\_1106\_5 | 1.076677 .0598484 1.33 0.184 .9655402 1.200606

sp75\_1403\_5 | .9951882 .0196528 -0.24 0.807 .9574054 1.034462

sp75\_1405 | .956151 .0238479 -1.80 0.072 .9105341 1.004053

sp75\_1435 | .9525787 .2515021 -0.18 0.854 .5677597 1.598222

sp75\_155 | .745755 .1625851 -1.35 0.178 .4864322 1.143326

sp75\_1725 | 1.005225 .0063424 0.83 0.409 .9928704 1.017733

sp75\_1915 | .9808285 .1009128 -0.19 0.851 .8017094 1.199967

sp75\_505 | .659203 .2075575 -1.32 0.186 .3556385 1.221883

sp75\_515 | .9618555 .0133157 -2.81 0.005 .936108 .9883111

sp75\_605 | .9858395 .0266976 -0.53 0.598 .9348776 1.039579

sp75\_701\_5 | .8863748 .096829 -1.10 0.270 .7155349 1.098004

sp75\_705 | 1.24889 .3949508 0.70 0.482 .6719528 2.321183

sp75\_805 | .9798816 .2183193 -0.09 0.927 .633176 1.516431

sp75\_815 | .8693679 .1264773 -0.96 0.336 .653686 1.156213

sp75\_825 | 1.016325 .160963 0.10 0.919 .7451114 1.386257

sp75\_905 | .9682344 .1836159 -0.17 0.865 .6676651 1.404114

sp77\_1605 | .9758177 .0138244 -1.73 0.084 .9490951 1.003293

sp77\_1915 | .7325635 .1175837 -1.94 0.053 .534834 1.003394

sp77\_205 | 1.003995 .0110963 0.36 0.718 .9824806 1.025981

sp77\_305 | 1.93429 1.053368 1.21 0.226 .6652389 5.624263

sp77\_315 | .500104 .3180418 -1.09 0.276 .1437929 1.739334

sp77\_405 | .9699524 .1499183 -0.20 0.844 .7164511 1.31315

sp77\_505 | 1.029101 .0311684 0.95 0.344 .96979 1.09204

sp77\_515 | .5353003 .2814384 -1.19 0.235 .1910168 1.500111

sp77\_605 | .5899706 .3209469 -0.97 0.332 .2031293 1.713516

sp77\_705 | 1.090978 .091829 1.03 0.301 .9250588 1.286657

sp77\_805 | 1.29828 .1905289 1.78 0.075 .9737565 1.730957

sp48\_26 | 1.256908 .0849576 3.38 0.001 1.100953 1.434955

sp48\_6 | 1.025445 .0857747 0.30 0.764 .8703876 1.208127

sp75\_1106 | 1.031799 .0959683 0.34 0.736 .8598528 1.238129

sp75\_1106\_6 | .8353758 .402739 -0.37 0.709 .3247231 2.14907

sp75\_1403\_6 | .992196 .0120977 -0.64 0.521 .9687661 1.016193

sp75\_1436 | 1.891272 .9821212 1.23 0.220 .6834901 5.2333

sp75\_156 | 1.810906 .7435291 1.45 0.148 .8098531 4.049354

sp75\_1712\_6 | .9672093 .0507711 -0.64 0.525 .8726476 1.072018

sp75\_1726 | 1.041626 .1265014 0.34 0.737 .820988 1.32156

sp75\_506 | .991365 .0599671 -0.14 0.886 .8805315 1.116149

sp75\_516 | 1.014074 .021323 0.66 0.506 .9731314 1.05674

sp75\_606 | 1.016933 .0161408 1.06 0.290 .9857847 1.049066

sp75\_706 | .9228789 .0892898 -0.83 0.407 .7634663 1.115577

sp75\_806 | 1.21846 .3012879 0.80 0.424 .7504736 1.978279

sp75\_816 | .9988763 .0413737 -0.03 0.978 .9209896 1.08335

sp77\_1106 | 6.73e-12 5.28e-12 -32.77 0.000 1.44e-12 3.13e-11

sp77\_1606 | 1.049237 .0207579 2.43 0.015 1.009331 1.090721

sp77\_1906 | 1.376768 .3185357 1.38 0.167 .8748277 2.1667

sp77\_1916 | 1.348341 .2484338 1.62 0.105 .9396467 1.934795

sp77\_206 | 1.043873 .0560596 0.80 0.424 .9395828 1.159738

sp77\_216 | 1.01342 .0484488 0.28 0.780 .9227752 1.112969

sp77\_506 | .8231677 .065253 -2.45 0.014 .7047142 .9615317

sp77\_516 | .9801737 .0218247 -0.90 0.368 .938318 1.023896

sp77\_606 | 4.674641 1.495462 4.82 0.000 2.497128 8.75096

sp77\_906 | .2998084 .0555384 -6.50 0.000 .2085267 .4310481

sp48\_27 | 1.142407 .1031206 1.47 0.140 .9571641 1.363502

sp48\_7 | 1.088519 .0659669 1.40 0.162 .9666099 1.225804

sp75\_1403\_7 | .9652217 .0542249 -0.63 0.529 .8645851 1.077572

sp75\_1437 | 1.73529 .3645808 2.62 0.009 1.149572 2.619435

sp75\_1727 | 2.73e-11 2.02e-11 -32.86 0.000 6.40e-12 1.16e-10

sp75\_337 | 1.05715 .0463702 1.27 0.205 .9700633 1.152055

sp75\_507 | .9982009 .0610509 -0.03 0.977 .885437 1.125326

sp75\_517 | .9927482 .0062352 -1.16 0.247 .9806023 1.005045

sp75\_607 | 1.008902 .0772327 0.12 0.908 .8683378 1.172221

sp75\_807 | 1.008623 .012553 0.69 0.490 .9843173 1.033529

sp75\_827 | 1.289408 .2285401 1.43 0.152 .9110027 1.824991

sp75\_907 | .8582551 .0880564 -1.49 0.136 .7019136 1.049419

sp77\_1437 | .6908501 .1993997 -1.28 0.200 .3923756 1.21637

sp77\_207 | 1.124234 .0520932 2.53 0.011 1.026632 1.231115

sp77\_507 | .9108915 .1100296 -0.77 0.440 .7188648 1.154213

sp77\_807 | .9051499 .1377996 -0.65 0.513 .6716361 1.219852

sp48\_28 | 1.145845 .1161321 1.34 0.179 .9394123 1.397642

sp48\_8 | 1.142753 .1369259 1.11 0.265 .9035667 1.445254

sp75\_1403\_8 | .9780297 .0137042 -1.59 0.113 .9515354 1.005262

sp75\_1438 | 5.50e-12 6.57e-12 -21.70 0.000 5.29e-13 5.72e-11

sp75\_1728 | 1.823593 .5645309 1.94 0.052 .9940786 3.345299

sp75\_208 | .9944496 .024695 -0.22 0.823 .9472072 1.044048

sp75\_518 | 1.041123 .0168503 2.49 0.013 1.008615 1.074678

sp75\_705\_8 | 1.112382 .4652495 0.25 0.799 .4900521 2.525025

sp75\_808 | 1.107176 .1166397 0.97 0.334 .9006237 1.361099

sp75\_818 | 1.087123 .1838042 0.49 0.621 .7804813 1.51424

sp77\_1438 | .4447397 .4356386 -0.83 0.408 .0652114 3.033112

sp77\_208 | 1.059597 .0251454 2.44 0.015 1.011442 1.110045

sp77\_408 | .9486918 .1486384 -0.34 0.737 .6978486 1.289701

sp77\_508 | .9342043 .1545565 -0.41 0.681 .6754878 1.292011

sp77\_704\_8 | 1.041275 .202242 0.21 0.835 .7116079 1.523668

sp77\_808 | .7481985 .4581233 -0.47 0.636 .2253329 2.484329

sp75\_1403\_9 | .8692357 .0373814 -3.26 0.001 .7989723 .9456782

sp75\_1729 | .6364231 .1337962 -2.15 0.032 .421499 .960938

sp75\_1909 | 1.012372 .0092631 1.34 0.179 .9943784 1.030691

sp75\_519 | .6214444 .2392459 -1.24 0.217 .2922158 1.321603

sp75\_809 | .9325379 .0368917 -1.77 0.077 .8629636 1.007722

sp75\_819 | .4881742 .183561 -1.91 0.057 .2336199 1.020093

sp77\_309 | .795416 .1488645 -1.22 0.221 .5511749 1.147887

sp77\_409 | .8477061 .1863739 -0.75 0.452 .5509383 1.304331

sp77\_509 | 1.009044 .0625854 0.15 0.885 .8935422 1.139477

sp77\_704\_9 | .5501797 .4820697 -0.68 0.495 .0987821 3.064297

sp77\_809 | .8605784 .0602757 -2.14 0.032 .7501903 .9872096

sp72\_610 | 1.356194 .2598568 1.59 0.112 .9315915 1.974324

sp72\_620 | 1.235866 .31183 0.84 0.401 .7537004 2.026488

sp72\_630 | 1.011266 .0140184 0.81 0.419 .9841606 1.039119

sp75\_100 | 1.081131 .2150535 0.39 0.695 .7320851 1.596597

sp75\_1101\_20 | .1400087 .1256669 -2.19 0.028 .0241072 .8131371

sp75\_1400 | .9070568 .0548055 -1.61 0.106 .8057566 1.021092

sp75\_1403\_10 | .9771904 .0168881 -1.34 0.182 .9446445 1.010858

sp75\_150 | .9389821 .2333197 -0.25 0.800 .576965 1.528147

sp75\_160 | 1.020353 .3642646 0.06 0.955 .506842 2.054131

sp75\_1712\_10 | .8532412 .0767776 -1.76 0.078 .7152827 1.017808

sp75\_1720 | .9562159 .048865 -0.88 0.381 .8650824 1.05695

sp75\_1730 | .8781576 .0828317 -1.38 0.168 .7299337 1.056481

sp75\_1910 | 1.012898 .0127769 1.02 0.310 .9881631 1.038253

sp75\_320 | .9711399 .0318176 -0.89 0.371 .9107386 1.035547

sp75\_340 | 1.001571 .0137557 0.11 0.909 .9749698 1.028898

sp75\_520 | 1.032853 .0420587 0.79 0.427 .9536233 1.118666

sp75\_600 | 1.249992 .4503075 0.62 0.536 .6169693 2.53251

sp75\_700 | .923005 .0514255 -1.44 0.150 .8275212 1.029506

sp75\_800 | 1.194435 .1405646 1.51 0.131 .9483977 1.504299

sp75\_810 | 1.028685 .0551908 0.53 0.598 .9260066 1.14275

sp75\_820 | 1.303414 .1382411 2.50 0.012 1.058774 1.60458

sp75\_900 | 1.017086 .036496 0.47 0.637 .9480123 1.091192

sp77\_1710 | .9412634 .0292493 -1.95 0.051 .8856467 1.000373

sp77\_200 | 1.020525 .022347 0.93 0.353 .9776522 1.065278

sp77\_210 | .9191351 .0838901 -0.92 0.356 .7685809 1.099181

sp77\_400 | 1.003427 .0125014 0.27 0.784 .979221 1.02823

sp77\_410 | 1.011689 .0208009 0.57 0.572 .9717307 1.053291

sp77\_500 | 1.115869 .1318693 0.93 0.354 .885159 1.406711

sp77\_510 | .7245879 .1220376 -1.91 0.056 .5208693 1.007983

sp77\_600 | 1.141212 .1944329 0.78 0.438 .8172287 1.593635

sp77\_700 | .8840387 .1286063 -0.85 0.397 .6647249 1.175711

sp77\_800 | 1.280461 .2909963 1.09 0.277 .8202064 1.998985

sp77\_810 | 1.314769 .2259836 1.59 0.111 .938738 1.841428

sp77\_900 | .7748172 .1500948 -1.32 0.188 .5300387 1.132637

mine\_time | .9990042 .0017168 -0.58 0.562 .9956451 1.002375

onsite\_insp\_hours | .9996242 .0001319 -2.85 0.004 .9993658 .9998828

|

state |

AL | 1.197382 .1139717 1.89 0.058 .9936007 1.442958

AR | 2.181526 .1199996 14.18 0.000 1.958565 2.429867

CO | .7488251 .1108524 -1.95 0.051 .5602382 1.000894

IL | 1.129624 .0866268 1.59 0.112 .971982 1.312833

IN | .9170612 .1449802 -0.55 0.584 .6727134 1.250163

MD | 1.08051 .1864857 0.45 0.654 .7704059 1.515437

MT | .9251709 .0610478 -1.18 0.239 .8129337 1.052904

NM | .8445057 .0438372 -3.26 0.001 .7628126 .9349477

OH | 1.167675 .1283978 1.41 0.159 .9412907 1.448506

OK | .8766193 .2344575 -0.49 0.622 .5189813 1.480711

PA | 1.04532 .0906444 0.51 0.609 .8819376 1.23897

TN | 1.400714 .1867841 2.53 0.012 1.078555 1.819099

UT | .6345982 .079367 -3.64 0.000 .4966404 .8108782

VA | .73435 .0537753 -4.22 0.000 .6361667 .8476866

WV | 1.072189 .0538179 1.39 0.165 .97173 1.183033

WY | 1.15396 .0737882 2.24 0.025 1.018033 1.308035

|

time |

2000 | 1.092853 .1216356 0.80 0.425 .8786627 1.359256

2000.25 | 1.152197 .1270183 1.29 0.199 .9283037 1.43009

2000.5 | 1.402159 .1456668 3.25 0.001 1.143848 1.718805

2000.75 | 1.053295 .1166217 0.47 0.639 .8478214 1.308567

2001 | 1.060987 .1089408 0.58 0.564 .8675802 1.297509

2001.5 | 1.229884 .129615 1.96 0.050 1.000363 1.512066

2001.75 | 1.006374 .1039883 0.06 0.951 .8218732 1.232292

2002 | 1.042708 .1168815 0.37 0.709 .8370431 1.298905

2002.25 | .957252 .1056326 -0.40 0.692 .7710745 1.188382

2002.5 | 1.169234 .1309514 1.40 0.163 .9387913 1.456244

2002.75 | 1.079656 .119965 0.69 0.490 .8683704 1.342351

2003 | .8769728 .103243 -1.12 0.265 .6962691 1.104575

2003.25 | .9758562 .1119622 -0.21 0.831 .7793374 1.221929

2003.5 | 1.074036 .1235151 0.62 0.535 .8572945 1.345575

2003.75 | .777091 .0897958 -2.18 0.029 .6196012 .9746113

2004 | 1.026921 .1176527 0.23 0.817 .8203827 1.285458

2004.25 | .9426891 .107202 -0.52 0.604 .7543457 1.178058

2004.5 | .9997188 .1154169 -0.00 0.998 .7972732 1.25357

2004.75 | .8538164 .0951142 -1.42 0.156 .6863435 1.062154

2005 | .7416328 .0829093 -2.67 0.008 .5957042 .9233094

2005.25 | .9652845 .0986337 -0.35 0.730 .790094 1.179321

2005.5 | .8277841 .0964825 -1.62 0.105 .6587266 1.040229

2005.75 | .7815954 .0938805 -2.05 0.040 .6176477 .9890613

2006 | .7904204 .0876419 -2.12 0.034 .6360288 .9822894

2006.25 | .8148724 .0995309 -1.68 0.094 .6413889 1.03528

2006.5 | .9091157 .1041108 -0.83 0.405 .7263411 1.137883

2006.75 | .7174044 .0873987 -2.73 0.006 .5650219 .9108834

2007 | .7557147 .086157 -2.46 0.014 .6043863 .9449331

2007.25 | .6889919 .092162 -2.78 0.005 .5300957 .8955171

2007.5 | .7706966 .0898708 -2.23 0.026 .6132323 .9685942

2007.75 | .761838 .0925144 -2.24 0.025 .6004769 .9665604

2008 | .6562348 .0783149 -3.53 0.000 .5193703 .8291658

2008.25 | .6585241 .0771372 -3.57 0.000 .5234376 .8284732

2008.5 | .7553913 .0916331 -2.31 0.021 .5955477 .9581366

2008.75 | .6094815 .0744232 -4.05 0.000 .4797567 .7742834

2009 | .6020773 .0747224 -4.09 0.000 .4720757 .7678792

2009.25 | .5704244 .0689751 -4.64 0.000 .4500614 .722977

2009.5 | .7106715 .0863664 -2.81 0.005 .5600466 .9018071

2009.75 | .5322248 .0633614 -5.30 0.000 .4214631 .6720951

2010 | .5707672 .0730812 -4.38 0.000 .4440899 .7335794

2010.25 | .5932304 .0740128 -4.19 0.000 .4645425 .7575675

2010.5 | .6775197 .0831769 -3.17 0.002 .5326263 .8618292

2010.75 | .5391547 .0670025 -4.97 0.000 .4226022 .6878519

2011 | .6311277 .0777502 -3.74 0.000 .4957419 .8034871

2011.25 | .6003713 .0735472 -4.16 0.000 .472221 .7632988

2011.5 | .7026496 .0870935 -2.85 0.004 .5511024 .8958706

2011.75 | .5651331 .0713365 -4.52 0.000 .4412696 .7237649

2012 | .6952456 .0854387 -2.96 0.003 .5464294 .8845907

2012.25 | .5876989 .0734101 -4.26 0.000 .4600768 .7507224

2012.5 | .6539789 .0829549 -3.35 0.001 .5100254 .838563

2012.75 | .5573628 .07347 -4.43 0.000 .4304622 .7216738

2013 | .5933169 .0769108 -4.03 0.000 .4602002 .7649387

2013.25 | .5009348 .0697625 -4.96 0.000 .3812755 .6581478

2013.5 | .655782 .0871708 -3.17 0.002 .5053733 .8509553

2013.75 | .552458 .072843 -4.50 0.000 .4266445 .7153727

2014 | .5107155 .073966 -4.64 0.000 .3845041 .6783551

2014.25 | .5439415 .0723759 -4.58 0.000 .419076 .7060112

2014.5 | .5599335 .0747488 -4.34 0.000 .4310272 .7273916

2014.75 | .5765948 .0764945 -4.15 0.000 .4445753 .7478184

2015 | .5617533 .074015 -4.38 0.000 .4339042 .7272729

2015.25 | .5894729 .0870011 -3.58 0.000 .4414015 .7872159

2015.5 | .7406832 .102384 -2.17 0.030 .5649001 .9711656

2015.75 | .4602802 .0729368 -4.90 0.000 .3373956 .6279214

2016 | .6161435 .0914722 -3.26 0.001 .4605886 .8242341

|

\_cons | .0000143 1.24e-06 -128.46 0.000 .0000121 .0000169

ln(hours) | 1 (exposure)

------------------+----------------------------------------------------------------

/lnalpha | -1.756714 .1634585 -2.077087 -1.436342

------------------+----------------------------------------------------------------

alpha | .1726111 .0282147 .1252946 .2377961

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(est1 stored)

**. lrtest pois nbin, stats force**

Likelihood-ratio test LR chi2(1) = 162.29

(Assumption: pois nested in nbin) Prob > chi2 = 0.0000

Akaike's information criterion and Bayesian information criterion

-----------------------------------------------------------------------------

Model | Obs ll(null) ll(model) df AIC BIC

-------------+---------------------------------------------------------------

pois | 28,337 -20154.17 -19223.27 398 39242.55 42526.81

nbin | 28,337 -19841.28 -19142.13 399 39082.25 42374.77

-----------------------------------------------------------------------------

Note: N=Obs used in calculating BIC; see [R] BIC note.

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**. summ MR spcv1\_yhat**

Variable | Obs Mean Std. Dev. Min Max

-------------+---------------------------------------------------------

MR | 30,289 .4096207 .9550592 0 14

spcv1\_yhat | 28,337 .4393844 .7079471 3.12e-13 13.69836