AoR Delineation and Corrective Action Report March 2014 excerpted associated files (AR #296)

Please note that due to the voluminous nature of the modeling inputs and outputs in the associated files, Region 5 is only including a hard copy of specific modeling information related to the dissolved phase plume modeling referenced on page 12 of *EPA Region 5's Consolidated Response to Petitions for Review*. This excerpt, below, shows the 165 files with data extracted from the (Subsurface Transport Over Multiple Phases, or STOMP) simulator output files, including 81 time-series files, 48 snapshot files, and 36 surface flux files that were provided to EPA. The list of snapshot files includes aqueous phase (dissolved) CO_2 outputs for multiple time steps during the injection and post-injection periods. Only this relevant excerpt is provided. The associated files in the administrative record include all aspects of all runs of the model and so encompass an enormous amount of data and file space. To the extent the Board would like copies of additional associated files, Region 5 can provide them, but it would need some time to do so due to the extraordinary volume of these files.

Table 1. Files submitted for the Output tab.

File Description	File Name
Time-series files (81 files): • Files for location-dependent variables named "xxx_vn.dat," where "xxx" is one of the location names, i.e., acz, mlw, acz, slw, or inj; "vn" is the name of the variable • Files for location-independent variables (i.e. the integrated CO2 mass in the domain) named "vn.dat"	ACZ early-detection monitoring well at the bottom of the Ironton: • acz_density_aq.dat • acz_density_gas.dat • acz_diff_porosity.dat • acz_gas_sat.dat • acz_mass_frac_aq_co2.dat • acz_mass_frac_aq_salt.dat • acz_mass_frac_gas_co2.dat • acz_p_aq.dat • acz_p_gas.dat • acz_rel_perm_aq.dat • acz_viscosity_aq.dat • acz_viscosity_gas.dat • acz_gas_sat_trapped.dat Stratigraphic well at the top of the Elmhurst: • sw_gas_sat_trapped.dat • sw_density_aq.dat • sw_density_gas.dat • sw_diff_porosity.dat • sw_gas_sat.dat • sw_mass_frac_aq_co2.dat • sw_mass_frac_aq_salt.dat • sw_mass_frac_gas_co2.dat • sw_p_aq.dat • sw_p_gas.dat • sw_rel_perm_aq.dat • sw_viscosity_aq.dat • sw_viscosity_gas.dat

File Description	File Name
	Multiple-level monitoring well at the top of the Elmhurst: • mlw_gas_sat_trapped.dat • mlw_density_aq.dat • mlw_density_gas.dat • mlw_diff_porosity.dat • mlw_gas_sat.dat • mlw_mass_frac_aq_co2.dat • mlw_mass_frac_aq_salt.dat • mlw_mass_frac_gas_co2.dat • mlw_p_aq.dat • mlw_p_gas.dat • mlw_rel_perm_aq.dat • mlw_viscosity_aq.dat • mlw_viscosity_gas.dat Single-level monitoring well #2, at the top of the Elmhurst: • slw_gas_sat_trapped.dat • slw_density_aq.dat • slw_density_gas.dat • slw_diff_porosity.dat • slw_gas_sat.dat • slw_mass_frac_aq_co2.dat • slw_mass_frac_aq_salt.dat • slw_mass_frac_gas_co2.dat • slw_p_aq.dat • slw_p_gas.dat • slw_rel_perm_aq.dat • slw_viscosity_aq.dat • slw_viscosity_gas.dat Injection well: • inj_gas_sat_trapped.dat • inj_density_aq.dat • inj_density_gas.dat • inj_diff_porosity.dat • inj_gas_sat.dat • inj_mass_frac_aq_co2.dat • inj_mass_frac_aq_salt.dat • inj_mass_frac_gas_co2.dat • inj_p_aq.dat • inj_p_gas.dat • inj_rel_perm_aq.dat • inj_viscosity_aq.dat • inj_viscosity_gas.dat Location-independent variables: • int_co2_mass_aq.dat • int_co2_mass.dat

File Description	File Name
	• int_co2_mass_gas.dat • int_co2_mass_gas_trapped.dat • well_1_co2_mass_int.dat • well_1_co2_mass_rate.dat • well_1_p.dat • well_2_co2_mass_int.dat • well_2_co2_mass_rate.dat • well_2_p.dat • well_3_co2_mass_int.dat • well_3_co2_mass_rate.dat • well_3_p.dat • well_4_co2_mass_int.dat • well_4_co2_mass_rate.dat • well_4_p.dat
Snapshot files (48 files): • The file name is a combination of the abbreviated variable name and the time	Snapshot files: • density_aq_10_yr.dat • density_aq_20_yr.dat • density_aq_5_yr.dat • density_aq_70_yr.dat • density_gas_10_yr.dat • density_gas_20_yr.dat • density_gas_5_yr.dat • density_gas_70_yr.dat • frac_aq_co2_10_yr.dat • frac_aq_co2_20_yr.dat • frac_aq_co2_5_yr.dat • frac_aq_co2_70_yr.dat • frac_aq_salt_10_yr.dat • frac_aq_salt_20_yr.dat • frac_aq_salt_5_yr.dat • frac_aq_salt_70_yr.dat • p_aq_10_yr.dat • p_aq_20_yr.dat • p_aq_5_yr.dat • p_aq_70_yr.dat • p_gas_10_yr.dat • p_gas_20_yr.dat • p_gas_5_yr.dat • p_gas_70_yr.dat • sat_gas_10_yr.dat • sat_gas_20_yr.dat • sat_gas_5_yr.dat • sat_gas_70_yr.dat • sat_gas_trapped_10_yr.dat • sat_gas_trapped_20_yr.dat • sat_gas_trapped_5_yr.dat • sat_gas_trapped_70_yr.dat • vim_gas_co2_10_yr.dat

File Description	File Name
	- vim_gas_co2_20_yr.dat - vim_gas_co2_5_yr.dat - vim_gas_co2_70_yr.dat - vimpa_gas_co2_10_yr.dat - vimpa_gas_co2_20_yr.dat - vimpa_gas_co2_5_yr.dat - vimpa_gas_co2_70_yr.dat - viscosity_aq_10_yr.dat - viscosity_aq_20_yr.dat - viscosity_aq_5_yr.dat - viscosity_aq_70_yr.dat - viscosity_gas_10_yr.dat - viscosity_gas_20_yr.dat - viscosity_gas_5_yr.dat - viscosity_gas_70_yr.dat
Surface flux files (36 files): The file name is a combination of the area size (i.e., 4x4 or 8x8), the component name (i.e., CO_2, salt, water), and surface direction, and the location of the surface if there is more than one	Surface flux files: 4x4_co2_aq_top_fran.dat 4x4_co2_aq_top_prov.dat 4x4_co2_gas_top_fran.dat 4x4_co2_gas_top_prov.dat 4x4_co2_top_fran.dat 4x4_co2_top_prov.dat 4x4_salt_east.dat 4x4_salt_north.dat 4x4_salt_south.dat 4x4_salt_top_fran.dat 4x4_salt_top_prov.dat 4x4_salt_west.dat 4x4_water_east.dat 4x4_water_north.dat 4x4_water_south.dat 4x4_water_top_fran.dat 4x4_water_top_prov.dat 4x4_water_west.dat 8x8_co2_aq_top_fran.dat 8x8_co2_aq_top_prov.dat 8x8_co2_gas_top_fran.dat 8x8_co2_gas_top_prov.dat 8x8_co2_top_fran.dat 8x8_co2_top_prov.dat 8x8_salt_east.dat 8x8_salt_north.dat 8x8_salt_south.dat 8x8_salt_top_fran.dat 8x8_salt_top_prov.dat 8x8_salt_west.dat 8x8_water_east.dat 8x8_water_north.dat

File Description	File Name
	• 8x8_water_south.dat • 8x8_water_top_fran.dat • 8x8_water_top_prov.dat • 8x8_water_west.dat