

Issue/Title: Pilgrim Nuclear Power Station (PNPS): Tritium in Groundwater Monitoring Wells

Topic: PNPS Updates as of September 28, 2012

Previous Plans: Results from groundwater monitoring well samples collected during the weeks of July 23, August 6, August 20, and September 3, 2012 were reported by Entergy. Split sample results for the weeks of July 23, August 6, August 20, and September 3, 2012 were also reported by MERL.

Current Status:

Table 1¹: July 23rd

Location	Date	MERL pCi/L	GEL pCi/L
MW 201	07/23/2012	2,424	2,310
MW 202	07/23/2012	-	-
MW 202 I	07/23/2012	-	-
MW 203	07/23/2012	-	-
MW 204	07/23/2012	-	-
MW 205	07/23/2012	4,355	4,220
MW 206	07/23/2012	473	977
MW 207	07/23/2012	-	-
MW 208-S	07/23/2012	-	-
MW 208-I	07/23/2012	-	-
MW 209	07/23/2012	924	1,111
MW 210	07/23/2012	-	-
MW 211	07/23/2012	1,163	1,310
MW 212	07/23/2012	-	-
MW 213	07/23/2012	-	-
MW 214	07/23/2012	-	-
MW 215 new	07/23/2012	1,064	1,230
MW 217 new	07/23/2012	474	925
MW 3	07/23/2012	-	-
MW 4	07/23/2012	-	-
SW-boat ramp	07/23/2012	-	-
SW-intake	07/23/2012	NDA(300)*	NDA(419)*

Table 2: August 6th

Location	Date	MERL pCi/L	GEL pCi/L
MW 201	08/06/2012	775	616
MW 202	08/06/2012	-	-
MW 202 I	08/06/2012	-	-
MW 203	08/06/2012	-	-
MW 204	08/06/2012	-	-
MW 205	08/06/2012	1,555	1,180
MW 206	08/06/2012	1,543	1,480
MW 207	08/06/2012	-	-
MW 208-S	08/06/2012	-	-
MW 208-I	08/06/2012	-	-
MW 209	08/06/2012	1,140	907
MW 210	08/06/2012	-	-
MW 211	08/06/2012	1,479	826
MW 212	08/06/2012	-	-
MW 213	08/06/2012	-	-
MW 214	08/06/2012	-	-
MW 215 new	08/06/2012	1,496	1,210
MW 217 new	08/06/2012	836	657
MW 3	08/06/2012	-	-
MW 4	08/06/2012	-	-
SW-boat ramp	08/06/2012	-	-
SW-intake	08/06/2012	NDA(300)*	NDA(398)*

* NDA = not detected at less than activity value listed

** results pending

*** well inaccessible

- not analyzed this week

¹ PNPS screening level for tritium in groundwater monitoring wells is 3,000 pCi/L, which is 1/10th of the NRC-approved Pilgrim Offsite Dose Calculation Manual standard for tritium in non-drinking water sources. The EPA drinking water standard is 20,000 pCi/L. The nearest drinking water wells are approximately 2.5 miles from the plant.

Table 3: August 20thTable 4: September 3rd

Location	Date	MERL pCi/L	GEL pCi/L	Location	Date	MERL pCi/L	GEL pCi/L
MW 201	08/20/2012	468	438	MW 201	09/3/2012	521	NDA(448)*
MW 202	08/20/2012	697	871	MW 202	09/3/2012	-	-
MW 202 I	08/20/2012	NDA(300)*	NDA(346)*	MW 202 I	09/3/2012	-	-
MW 203	08/20/2012	NDA(300)*	NDA(347)*	MW 203	09/3/2012	-	-
MW 204	08/20/2012	NDA(300)*	NDA(341)*	MW 204	09/3/2012	-	-
MW 205	08/20/2012	1,749	1,670	MW 205	09/3/2012	1,658	1,400
MW 206	08/20/2012	1,104	1,320	MW 206	09/3/2012	1,094	1,080
MW 207	08/20/2012	448	537	MW 207	09/3/2012	-	-
MW 208-S	08/20/2012	NDA(300)*	NDA(345)*	MW 208-S	09/3/2012	-	-
MW 208-I	08/20/2012	NDA(300)*	NDA(354)*	MW 208-I	09/3/2012	-	-
MW 209	08/20/2012	919	696	MW 209	09/3/2012	892	800
MW 210	08/20/2012	NDA(300)*	738	MW 210	09/3/2012	-	-
MW 211	08/20/2012	1,155	866	MW 211	09/3/2012	1,154	951
MW 212	08/20/2012	***	***	MW 212	09/3/2012	-	-
MW 213	08/20/2012	NDA(300)*	NDA(345)*	MW 213	09/3/2012	-	-
MW 214	08/20/2012	NDA(300)*	NDA(337)*	MW 214	09/3/2012	-	-
MW 215 new	08/20/2012	1,102	1,090	MW 215 new	09/3/2012	1,254	831
MW 217 new	08/20/2012	530	657	MW 217 new	09/3/2012	556	526
MW 3	08/20/2012	NDA(300)*	NDA(347)*	MW 3	09/3/2012	-	-
MW 4	08/20/2012	425	419	MW 4	09/3/2012	-	-
SW-boat ramp	08/20/2012	-	-	SW-boat ramp	09/3/2012	-	-
SW-intake	08/20/2012	NDA(300)*	NDA(364)*	SW-intake	09/10/2012	NDA(300)*	NDA(333)*

* NDA = not detected at less than activity value listed

** results pending

*** well inaccessible

- not analyzed this week

The groundwater monitoring results reported by Entergy show MW205 increased to a level of 4,220 pCi/L of tritium detected during the week of July 23rd, decreased to a level of 1,180 pCi/L of tritium detected during the week of August 6th, increased to a level of 1,670 pCi/L of tritium detected during the week of August 20th, and decreased to a level of 1,400 pCi/L of tritium detected during the week of September 3rd. Entergy results show that MW206 decreased to 977 pCi/L of tritium detected during the week of July 23rd, increased to a level of 1,480 pCi/L of tritium detected during the week of August 6th, decreased to a level 1,320 pCi/L of tritium detected during the week of August 20th, and decreased to a level of 1,080 pCi/L of tritium detected during the week of September 3rd. With the exception of MW201, results for the other priority wells during the weeks of July 23rd, August 6th, August 20th, and September 3rd were within typical

ranges detected since the groundwater monitoring for tritium began (i.e. no detectable tritium to approximately 1,300 pCi/L of tritium detected). The level of tritium detected in MW201 during the week of July 23rd (2,310 pCi/L) was higher than historically measured in this well (i.e. <1,000 pCi/L). Tritium results for the sample from MW201 during the weeks of August 6th (616 pCi/L) and August 20th (438 pCi/L) were consistent with historical results and no tritium was detected in the September 3rd sample. Entergy is evaluating possible reasons for the result from the week of July 23rd. Tritium results for non-priority wells were within their typical historical ranges (i.e. no detectable tritium to <1000 pCi/L). It should be noted the MW212 was inaccessible the week of August 20th due to the ongoing construction of the dry cask storage facility access road and was not able to be sampled. Split sample results from MERL for the weeks of July 23rd, August 6th, August 20th, and September 3rd were generally consistent with Entergy results (see tables above).

Entergy surface water sampling results for the intake canal downstream of MW205 for the weeks of July 23, August 6, August 20, and September 10, 2012 indicated no detectable tritium. MERL split sample results for surface water also indicated no detectable tritium for samples collected during the weeks of July 23, August 6, August 20, and September 10, 2012. MDPH will be following up with Entergy to determine why there is no surface water sample result for the boat ramp area that should have been part of the comprehensive sampling round collected the week of August 20th.

MDPH staff conducted a site visit at PNPS on Thursday August 30, 2012 to observe the excavations underway in the vicinity of the main stack drain line. Excavations continued to visually inspect the main stack drain line and station heating line during the week of September 3rd. Entergy reported that all sections of the main stack drain line and station heating line appeared intact and Entergy was having engineering take a look at video taken of the pipes to confirm their findings. Soil samples were also collected at each excavation site at the depth of pipe observation and splits have been sent to MERL for split sample analysis.

Well MW216 was successfully excavated and was installed September 6th located just down gradient of the end of the deep foundation of the reactor and turbine buildings and up gradient of MW206. Final well development steps were conducted the week of September 10th and a groundwater sample was collected the week of September 17th. Four consecutive weekly samples will be collected from MW216. Results will be evaluated and a decision will be made on a future frequency of testing for this well.

Looking Forward:

MDPH will continue to closely follow all investigational activities that are currently underway at PNPS (i.e. well placement, excavation activities, etc.).