



May 20, 2009

Reference No. 050681

United States Nuclear Regulatory Commission
Office of Federal and State Materials and
Environmental Management Programs (FSME)
Two White Flint North
Washington, D.C. 20555

Dear Sir:

**Re: REQUEST FOR LICENSE AMENDMENT
Stepan Company, 100 West Hunter Ave.
Maywood, New Jersey
NRC License STC-1333**

This letter is a reply to a Notice of Violation (NOV) issued by the U.S. Nuclear Regulatory Commission (NRC) in a letter dated February 9, 2008 and a request for license amendment regarding License STC-1333 dated April 4, 1978 (amended November 5, 1987). The License authorizes Stepan Company (Stepan) to possess thorium tailings in underground storage in three burial pits (BP #1 through BP #3) at 100 West Hunter Avenue, Maywood, New Jersey (Site). As part of the License, Stepan is required to conduct a monitoring program as proposed in the enclosure to a letter dated June 29, 1987.

The NOV issued by the NRC states that Stepan did not sample and analyze water for gross alpha activity or dissolved specific radionuclides for each monitoring well during each half of every calendar quarter as required by the NRC License Condition No. 12 of License No. STC-1333, Amendment 3. Specifically, from September 2006 through February 9, 2009, Stepan did not sample and analyze water from Well #6, nor did they obtain relief from the requirement through a license amendment.

Groundwater Monitoring Program

The groundwater monitoring program consists of quarterly sampling of nine (9) monitoring wells (Well #1 through #9) located around three burial pits at the Site, and analysis of the samples for gross alpha. Figure 1 shows the locations of the burial pits and monitoring wells. Stepan began implementation of this program in 1987. CRA, on behalf of Stepan, took over the collection of the monitoring program samples in 2008; prior to that time other consultants conducted the sampling.

Tables 1 and 2 present the groundwater results (gross alpha) for the quarterly groundwater sampling event conducted in September 2008 and December 2008, respectively. In general, results from the September and December 2008 monitoring event are consistent with historical data – all results are below 15 pCi/L gross alpha,



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with the exception of Well #9 in September 2008. The gross alpha level was 1.26 pCi/L for Well #9 in December 2008. Wells #4 through #6 were not sampled in September 2008. Well #4 was located following the September sampling event. Well #5 was covered with a rolloff container during the September 2008 sampling event. Both wells #4 and #5 were sampled in December 2008.

Well #6 Corrective Action

Well #6, the subject of the NOV, is located near the northeastern gate to the Plant. In 2005, a temporary road was installed through the northeastern gate when Stepan began work on the Natural Products warehouse. The temporary road was installed so that the United States Army Corps of Engineers (USACE) could gain access to and remediate BP #3. It is believed that Well #6 was covered during the construction of the temporary road. A review of the well sampling records indicates that Well #6 was last sampled in the fourth quarter of 2005. This last sampling date is consistent with the date when the road was constructed. Recently, both CRA and Stepan have made several attempts to locate Well #6 in the field, including the use of metal detectors; however, these efforts were unsuccessful. At this time we believe this well is likely buried.

Stepan requests a license amendment proposing no corrective action for Well #6. This conclusion is based on the following:

- Over ten years of historical monitoring data reveals that elevated gamma levels are not a concern at Well #6. No gamma detections above 15 pCi/L have ever been detected at Well #6.
- Well #6 is located in the interior of the property and the groundwater is not a source of drinking water.
- Well #6 is located immediately adjacent to BP #1 and will likely be impacted during the Formerly Utilized Sites Remedial Action Program (FUSRAP) excavation requiring it to be abandoned.
- USACE has commenced remediation of the burial pits and will be remediating them over the next few years.

Ongoing Communication

On November 25, 2008, a meeting was held to review the NRC License between NRC, USACE, New Jersey Department of Environmental Protection (NJDEP), Stepan, and Conestoga-Rovers & Associates (CRA). The primary intent of the November 25th meeting was to discuss the transfer of the License to USACE, who is remediating the burial pits under the FUSRAP. In January 2009, NRC suspended the license and USACE took possession of BP #3 in order to remediate this burial pit. As part of this process, the integrity of the monitoring wells around BP #3 (Wells #1 through #3) may be impacted. Stepan will communicate with USACE regarding protecting these wells and if they need to be abandoned due to planned operations. Stepan will notify NRC regarding any potential impacts from FUSRAP operations to any of the monitoring wells used in



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the monitoring program. In the meantime, Stepan will continue with the monitoring program as agreed to with the NRC.

If you have any questions, please do not hesitate to call. I can be reached at (201)-712-7644.

Sincerely,



Mark Stanek
Stepan Company

cc:

Christina King Loundy, Stepan Company

Jeff Nelson, Stepan Company

John Garges, Connestoga-Rovers & Associates



Table 1
Analytical Results of Third Quarter 2008 NRC Well Sampling
Stepan Company
100 West Hunter Avenue
Maywood, New Jersey

Sample Identification	NRC Permit Criteria	Well 1	Well 1 DUP	Well 2	Well 3	Well 4	Well 5	Well 7	Well 8	Well 9
Sample Date	(pCi/L)	9/26/2008	9/26/2008	9/23/2008	9/23/2008	9/23/2008	9/23/2008	9/23/2008	9/26/2008	9/23/2008
<i>(all results in pCi/L)</i>										
Gross Alpha	15	1.17	0.65	9.58	8.61	NS	--	3.40	2.92	56.0

Notes:

pCi/L = pico Curies per Liter.

Bold/Box = Analyte detected above Permit Criteria.

NS = Not sampled because monitoring well could not be found (with plant's assistance)

Well 5 was obstructed during the sampling event.

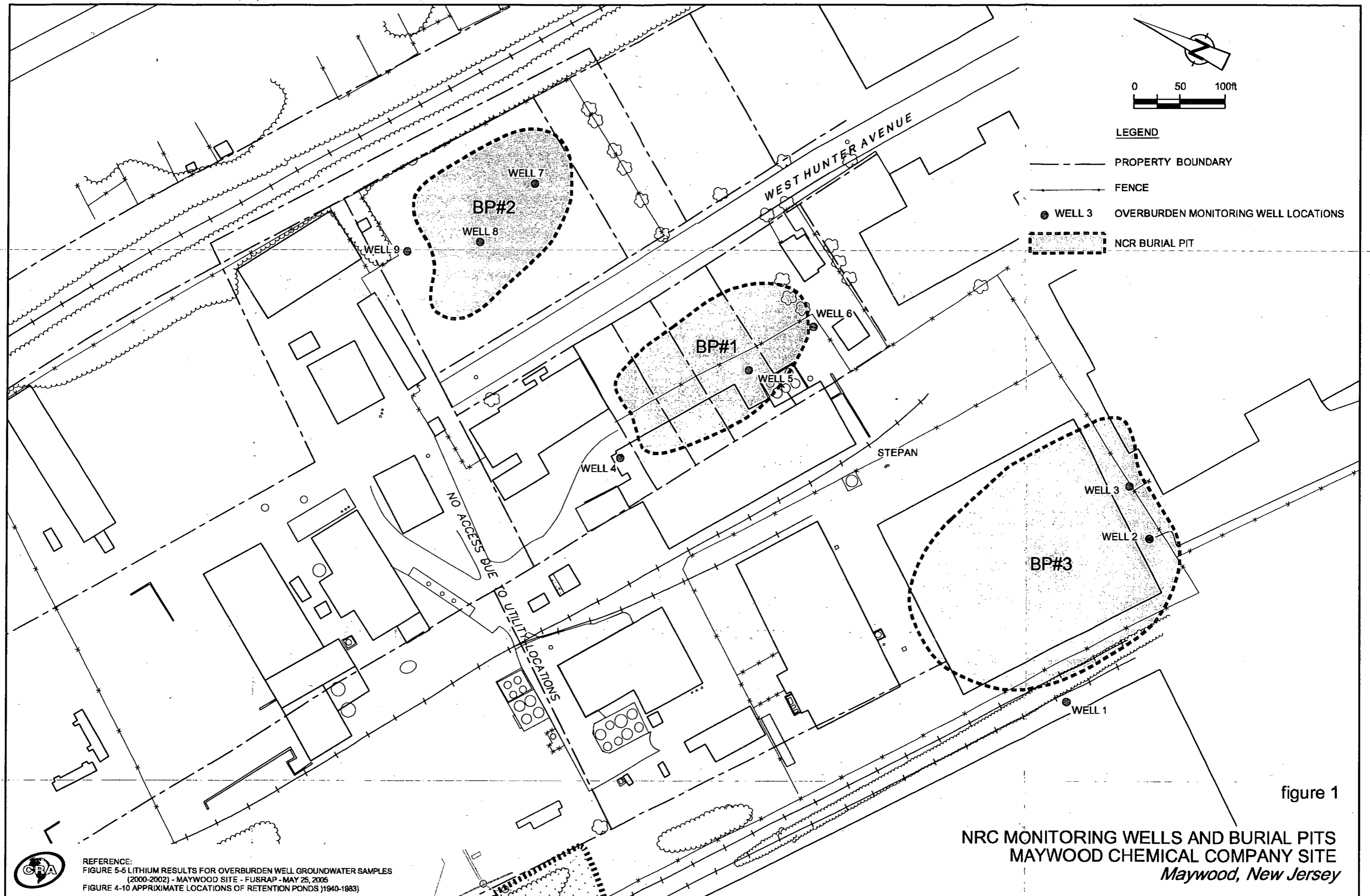


figure 1

NRC MONITORING WELLS AND BURIAL PITS
MAYWOOD CHEMICAL COMPANY SITE
Maywood, New Jersey



REFERENCE:
FIGURE 5-5 LITHIUM RESULTS FOR OVERBURDEN WELL GROUNDWATER SAMPLES
(2000-2002) - MAYWOOD SITE - FUSRAP - MAY 25, 2005
FIGURE 4-10 APPROXIMATE LOCATIONS OF RETENTION POND (1940-1983)

Table 2
 Analytical Results of Fourth Quarter 2008 NRC Well Sampling
 Stepan Company
 100 West Hunter Avenue
 Maywood, New Jersey

Sample Identification	NRC Permit Criteria	Well 1	Well 2	Well 3	Well 4	Well 5	Well 7	Well 8	Well 9
Sample Date	(pCi/L)	12/15/2008	12/15/2008	12/15/2008	12/15/2008	12/15/2008	12/15/2008	12/15/2008	12/15/2008
<i>(all results in pCi/L)</i>									
Gross Alpha	15	6.27	2.81	0.76	1.35	2.39	1.63	0.27	1.26

Notes:

pCi/L = pico Curies per Liter.

Bold/Box = Analyte detected above Permit Criteria.