



December 15, 2022

Mr. Paul Davis
Oklahoma Department of Environmental Quality
707 North Robinson
Oklahoma City, OK 73101

Mr. James Smith
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Mr. Robert Evans
U.S. Nuclear Regulatory Commission
1600 East Lamar Blvd; Suite 400
Arlington, TX 76011-4511

Re: Docket No. 07000925; License No. SNM-928
Cimarron Environmental Response Trust
Proposal to Abandon Monitor Wells on Divested Property

Dear Sirs:

Solely as Trustee for the Cimarron Environmental Response Trust (CERT), Environmental Properties Management LLC (EPM) submits herein to the U. S. Nuclear Regulatory Commission (NRC) and the Oklahoma Department of Environmental Quality (DEQ) a request to abandon three monitor wells located on former CERT property.

Background

Well 1319 was installed as a water supply well in the 1960s. In the late 1980s, it was given the designation 1319; at that time, the designations 1301 through 1318 had already been assigned to wells that had been installed through 1985. Groundwater samples were collected from Well 1319 from 1988 through 1997; uranium concentrations varied but were always less than 100 picocuries per liter (pCi/L). These results were reported in *Decommissioning Plan Groundwater Evaluation Report* (Kerr-McGee Corporation, 1998, ML20203M069) which concluded that impact to groundwater was not of concern in this area.

Groundwater samples from Well 1319 continued to be collected and analyzed on an annual basis. During the 2001 sampling events, it was observed that personnel were not purging the well prior to sample collection. A groundwater sampling procedure was developed and implemented to ensure that groundwater samples collected for laboratory analysis were representative of the groundwater in the formation. The concentration of uranium in a sample collected from Well

Cimarron Environmental Response Trust
Proposal to Abandon Monitor Wells on Divested Property

1319 in June 2002 exceeded 180 pCi/L, at 220 pCi/L total uranium. Duplicate samples were collected again in September 2002 to evaluate the legitimacy of that result; the uranium concentration for those samples averaged 405 pCi/L.

Well 1319 Area Groundwater Assessment

This triggered a groundwater investigation in what was then referred to as the Well 1319 Area. In March and April 2003, Monitor Wells 1319A-1 through 1319A-3 were installed in Sandstone A (25 – 40 ft below ground surface [bgs]). Monitor Wells 1319B-1 through 1319B-3 were installed in Sandstone B (65 – 80 feet bgs). Monitor Well 1319C-1 was installed in Sandstone C (105 – 120 feet bgs). Attachment 1 shows the locations of monitor wells in the Well 1319 Area.

In June 2003, groundwater samples were collected from Monitor Well 1319B-1 and 1319C-1. Monitor Well 1319B-1 (the Sandstone B well nearest and most directly downgradient from Well 1319) yielded 200 pCi/L total uranium. A sample collected from Monitor Well 1319C-1 (the Sandstone C well near and downgradient from Well 1319) yielded 308 pCi/L total uranium.

Monitor Wells 1319B-4, 1319B-5, 1319C-2, and 1319C-3 were installed in July to obtain additional information on uranium concentrations in Sandstones B and C. Samples were collected from all eleven monitor wells in the Well 1319 Area in July 2003. None of these four additional monitor wells yielded uranium concentrations exceeding the drinking water standard of 30 ug/L.

The results of this investigation were reported in *Assessment Report for Well 1319 Area* (Cimarron Corporation, 2003, ML040070526).

Abandonment of Well 1319

Well 1319 was abandoned in February 2003. At some point in the past, the well had been cut off at grade, but it had not been capped; it therefore provided an open pathway for surface water to enter the well. The casing extended to a depth of 273 feet. A camera was lowered into the well but even after flushing, the water was too murky to determine where the casing was perforated. Sediment, pieces of metal, tape and sediment filled the bottom 13 feet of the well. This material was flushed out of the well, and analysis of the sediment showed that it was contaminated with uranium.

Multiple attempts were made to remove the entire casing, but only the top 90 feet of casing could be extracted. Torch-cut slots were found from 57 – 63 feet below ground surface (bgs) and from 88 – 90 feet bgs. Torch-cut slots presumably extended below 90 feet bgs, but how far below is not known. The abandonment of Well 1319 was reported in *Assessment Report for Well 1319 Area* (Cimarron Corporation, 2003, ML040070526).

Remediation of Groundwater in Sandstones B and C

An airline leading into ¾" tubing was installed in Monitor Wells 1319B-1 and 1319C-1 and groundwater was pumped by air lift from the monitor wells. Approximately one quart per minute

Cimarron Environmental Response Trust
Proposal to Abandon Monitor Wells on Divested Property

of groundwater was pumped from these monitor wells, and samples of the discharge were collected and analyzed for uranium at approximately quarterly intervals.

The DEQ had established a concentration limit for nitrate of 52 milligrams per liter (mg/L) based on an occupational scenario, and in 2003 the concentration of nitrate in groundwater in Monitor Well 1319B-1 exceeded 100 mg/L.

By May 2004, the concentration of uranium in the groundwater coming from both 1319B-1 and 1319C-1 had dropped below the NRC Criterion of 180 pCi/L. Groundwater samples continued to be collected until June 2008, and uranium concentrations continued to decline in both wells.

Groundwater Monitoring by the CERT

Prior to the establishment of the CERT, the licensee focused exclusively on remediating groundwater to compare uranium concentrations with the NRC Criterion of 180 pCi/L. The objective was to achieve termination of the NRC license, which was then solely based on the concentration of licensed material. When the CERT was created in 2011, the remediation of groundwater for all constituents of concern (COCs) was established as one of the objectives of the Trust.

During the development of a site-wide groundwater remediation strategy, the area within which the former process buildings were located was designated the Process Building Area (PBA), of which the Well 1319 Area was a part. Samples of groundwater from monitor wells located in the PBA were collected and analyzed for uranium, nitrate, and fluoride numerous times between 2011 and 2018.

Fluoride concentrations were consistently detected at background concentrations in all Well 1319 Area monitor wells. Uranium concentrations were below the State Criterion in all monitor wells except 1319B-1; groundwater samples collected from Monitor Well 1319B-1 showed continuous decline, and by 2015, the concentration of uranium complied with the State Criterion. Nitrate concentrations were consistently less than the State Criterion in all Well 1319 Area monitor wells except in Monitor Well 1319B-1.

Well 1319 Area Well Abandonment

EPM submitted a request to abandon numerous monitor wells at the Cimarron site in the April 1, 2019, *Proposed 2019 Budget – Revision 1*. The list included all Well 1319 Area monitor wells except 1319B-1, 1319B-3, and 1319B-4. The DEQ approved the proposed scope of work and budget in a letter dated April 30, 2019. The NRC approved the proposed scope of work and budget in a letter dated May 16, 2019. Eight of the eleven monitor wells in the Well 1319 Area were abandoned in December 2019. Monitor Wells 1319B-1, 1319B-3, and 1319B-4 are the only three monitor wells that remain in the PBA.

Current Status of Groundwater in the PBA

Attachments 2 through 4 present the concentration data obtained for uranium, nitrate, and fluoride, respectively, for groundwater samples collected from Monitor Wells 1319B-1, 1319B-3

Cimarron Environmental Response Trust
Proposal to Abandon Monitor Wells on Divested Property

and 1319B-4 since the Trust was formed in 2011. The concentrations of all COCs have declined to less than the State Criterion in all three remaining monitor wells.

In 2015, the CERT divested approximately 24 acres of property which included the former processing buildings and the Well 1319 Area. A Purchase and Sale Agreement was executed for the divestiture of the property, identifying a portion of the 24-acre property as "Tract B". Section 5.2 of the Agreement stated that the "... Seller shall retain all responsibility it currently has for any work required by law to investigate and remediate groundwater described in Tract B ...". It also stated, "Retained Environmental Liabilities include Seller responsibility for the plugging and abandonment of all groundwater monitor wells installed on the Property in accordance with State and Federal laws and regulations."

Conclusion

Analysis of groundwater samples collected from all three monitor wells remaining in the PBA demonstrate that the concentrations of all COCs comply with the State Criteria. Abandonment of the three remaining monitor wells would release the Trust from any further obligation per Section 5.2 of the Purchase and Sale Agreement.

The abandonment of these three monitor wells is included in the proposed scope of work and budget for 2023. Approval of the scope of work and budget by both the NRC and the DEQ will constitute both agencies' approval to abandon the monitor wells.

If you have any questions or desire clarification, please contact me at jlux@envpm.com or at (405) 642-5152.

Sincerely,

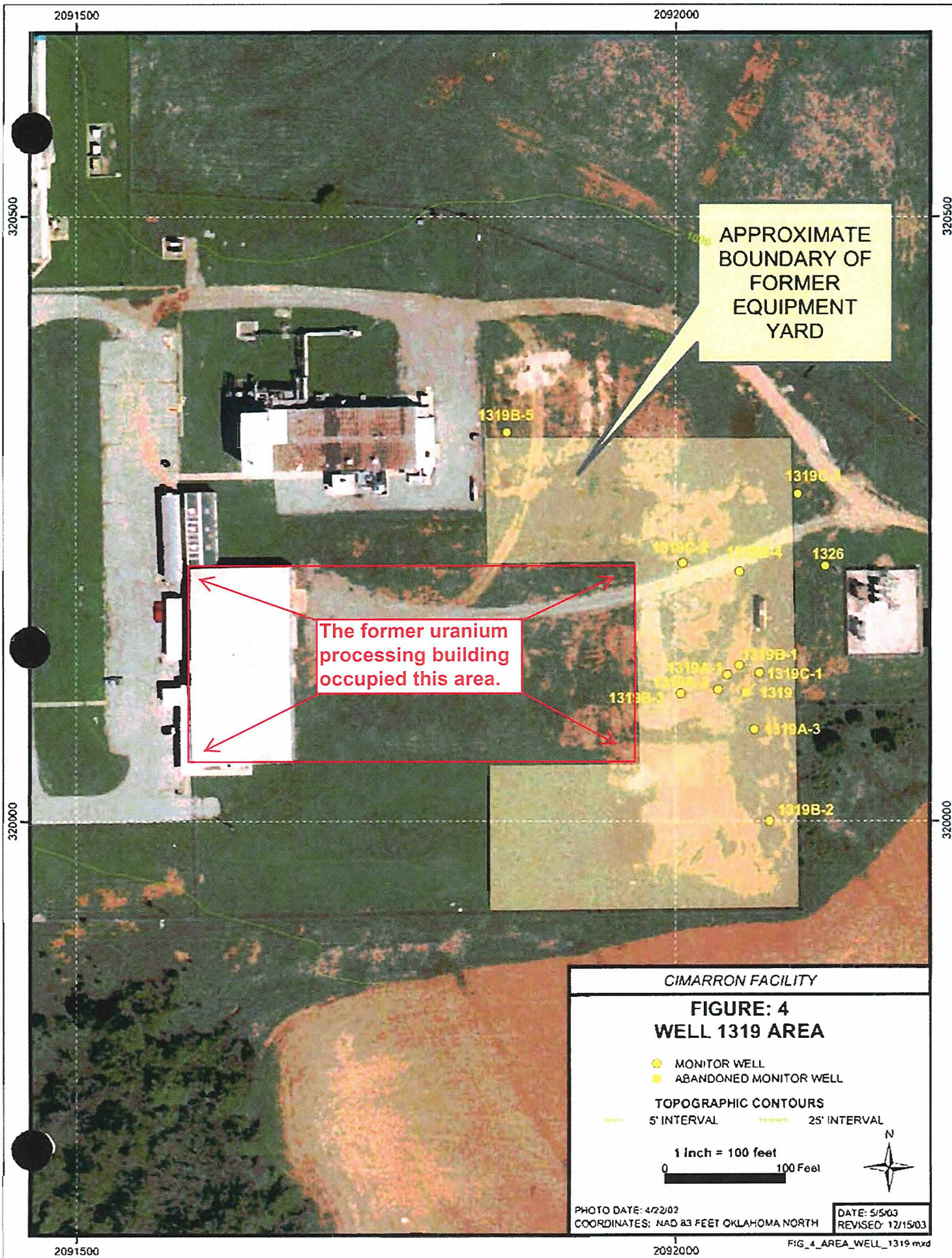


Jeff Lux, P.E.
Project Manager

cc: Michael Broderick, Oklahoma Department of Environmental Quality
NRC Public Document Room

ATTACHMENT 1
WELL 1319 AREA

Figure 4 from *Assessment Report for Well 1319 Area*



ATTACHMENT 2
URANIUM 238 DATA FOR PROCESS BUILDING AREA MONITOR WELLS

Attachment 2
Uranium 238 Data (µg/L) for Process Building Area Monitor Wells

Location	Date	Result	DL	Qualifier
1319B-1	4/15/2011	42.8	0.067	
	5/16/2013	29.4	0.067	
	3/10/2014	30.9	0.067	
	4/1/2015	25	0.067	
	4/28/2017	16.2	0.067	
1319B-3	4/15/2011	24.8	0.067	
	8/1/2012	25.8	0.067	
	5/16/2013	31	0.067	
	3/10/2014	26.5	0.067	
	4/1/2015	26.9	0.067	
	4/28/2017	23.9	0.067	
1319B-4	4/15/2011	1.48	0.067	
	5/16/2013	1.43	0.067	
	3/11/2014	1.43	0.067	
	4/1/2015	1.64	0.067	
	4/28/2017	1.61	0.067	

ATTACHMENT 3
NITRATE DATA FOR PROCESS BUILDING AREA MONITOR WELLS

Attachment 3
Nitrate Data (mg/L) for Process Building Area Monitor Wells

Location	Date	Result	DL	Qualifier
1319B-1	4/15/2011	85.5	5	
	5/16/2013	58	0.85	
	3/10/2014	54.2	1.7	
	4/1/2015	38.6	0.85	
	2/18/2016	46.3	0.85	
	5/12/2016	52	1.7	
	8/10/2016	47.1	1.7	J
	10/19/2016	39.6	0.85	
	2/8/2017	31	0.85	
	4/28/2017	22.4	0.425	
	8/2/2017	38.5	0.85	
	11/7/2017	14.7	0.85	
	2/7/2018	45	1.7	
	5/9/2018	37.3	0.425	
	8/27/2018	21.9	0.85	
	11/8/2018	30	0.425	
	10/21/2022	30.6	0.425	
1319B-3	4/15/2011	75.5	5	
	8/1/2012	82.4	1.7	
	5/16/2013	90.1	1.7	
	3/10/2014	81.2	1.7	
	4/1/2015	69	0.85	
	2/18/2016	61	2.13	
	5/12/2016	66.4	1.7	
	8/10/2016	61	8.5	
	10/19/2016	61.9	1.7	
	2/8/2017	64.4	1.7	
	4/28/2017	52.5	0.85	
	8/2/2017	58	0.85	
	11/7/2017	55.5	0.85	
	2/7/2018	64	1.7	
	5/9/2018	56	0.85	
	8/27/2018	54.4	1.7	
	11/8/2018	57	0.85	
	10/20/2022	36	0.85	

Attachment 3
Nitrate Data (mg/L) for Process Building Area Monitor Wells

Location	Date	Result	DL	Qualifier
1319B-4	4/15/2011	3.63	0.5	
	5/16/2013	3.77	0.085	
	3/11/2014	3.22	0.17	
	4/1/2015	2.78	0.085	
	4/28/2017	3.24	0.085	
	10/21/2022	3.79	0.085	

ATTACHMENT 4
FLUORIDE DATA FOR PROCESS BUILDING AREA MONITOR WELLS

Attachment 4
Fluoride Data (mg/L) for Process Building Area Monitor Wells

Location	Date	Result	DL	Qualifier
1319B-1	4/15/2011	0.32	0.03	
	5/16/2013	0.32	0.03	
	3/10/2014	0.30	0.03	
	4/1/2015	0.31	0.03	
	4/28/2017	0.35	0.03	
1319B-3	4/15/2011	0.31	0.03	
	8/1/2012	0.31	0.03	
	5/16/2013	0.30	0.03	
	3/10/2014	0.26	0.03	
	4/1/2015	0.25	0.03	
	4/28/2017	0.29	0.03	
1319B-4	4/15/2011	0.42	0.03	
	5/16/2013	0.41	0.03	
	3/11/2014	0.31	0.03	
	4/1/2015	0.27	0.03	
	4/28/2017	0.32	0.03	