Pro2Serve®

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P2S-15-198

September 21, 2015

Ms. Jennifer Woodard
Contracting Officer's Representative
U.S. Department of Energy, Portsmouth/Paducah Project Office
5501 Hobbs Road
Kevil, KY 42053

Dear Ms. Woodard:

Subject: Submittal of Paducah Cascade Technetium-99 Sampling Results Graph
Contract Number: GS-10F-0198K
Task Order: DE-DT0005139

As requested by Reinhard Knerr, Professional Project Services, Inc. is submitting the Paducah Cascade Technetium-99 Sampling Results Graph.

If you have any questions, please contact me at (270) 441-6831.

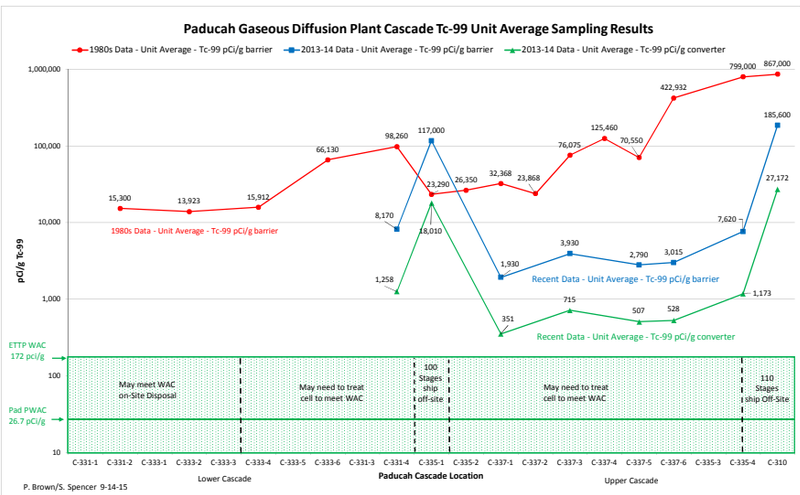
Regards,

Mark J. DeGraff
Acting Program Manager

Enclosure:
Paducah Cascade Tc-99 Sampling Results Graph

Cc w/enclosure:
Dan Burke, DOE
Kim Knerr, DOE
Reinhard Knerr, DOE
Dave Dollins, DOE
Pamela Baird, P2S
Stephen Spencer, P2S
Christine Buttermore, P2S
Pro2Serve Contracts

Location	Updated 1980s data 1980s Data - Unit Average - Tc-99 pCi/g barrier	Recent Data - Unit Avg. 2013-14 Data - Unit Average - Tc-99 pCi/g barrier	Recent Data 2013-14 Data - Unit Average - Tc-99 pCi/g converter	PAD-PWAC Tc-99 (pCi/g)	ETTP WAC Tc-99 (pCi/g)
C-331-1				26.7	172
C-331-2	15,300				
C-333-1					
C-333-2	13,923				
C-333-3					
C-333-4	15,912				
C-333-5					
C-333-6	66,130				
C-331-3					
C-331-4	98,260	8170	1258		
C-335-1	23,290	117000	18010		
C-335-2	26,350				
C-337-1	32,368	1930	351		
C-337-2	23,868				
C-337-3	76,075	3930	715		
C-337-4	125,460				
C-337-5	70,550	2790	507		
C-337-6	422,932	3015	528		
C-335-3					
C-335-4	799,000	7620	1173		
C-310	867,000	185600	27172	26.7	172



1980 Technetium Data

Location	Tc-99 (ppb)	Tc-99 (pCi/g)	Calc Tc-99 (pCi/g)	Unit Avg. Tc-99 (pCi/g)	Reference
C-331-2.2	900	15,284	15,300	15,300	KY/L-1225, pg 84
C-333-2.3	819	13,908	13,923	13,923	KY/L-1225, pg 84
C-333-4.3.2	872		14,824		KY/L-821, Pt 8, pg 7
C-333-4.7.7	1000		17,000	15,912	KY/L-1225, pg 13
C-333-6.4.1	3,890		66,130	66,130	KY/L-821, Pt 9, pg 7
C-331-4.9	5780		98,260	98,260	KY/L-1225, pg 85
C-335-1.1	1,370	23,286	23,290	23,290	KY/L-1225, pg 84
C-335-2.1	1,500		25,500		KY/L-821, Pt 11, pg 15
C-335-2.8	1,600		27,200	26,350	KY/L-821, Pt 11, pg 15
C-337-1.5	1,480		25,160		KY/L-821, Pt 6, pg 14
C-337-1.7	977		16,609		KY/L-821, Pt 7, pg 18
C-337-1.9	4,900		83,300		KY/L-821, Pt 9, pg 7
C-337-1.10.3	259	4,398	4,403	32,368	KY/L-1225, pg 44
C-337-2.3	2,400		40,800		KY/L-821, Pt 1, pg 7
C-337-2.5.1	1,350	22,025	22,950		KY/L-1225, pgs 5 & 15
C-337-2.7.2	1,200	20,378	20,400		KY/L-1225, pg 10
C-337-2.7	1,460	24,794	24,820		KY/L-1225, pg 9
C-337-2.2	610	10,359	10,370	23,868	KY/L-1225, pg 81
C-337-3.8	2,200		37,400		KY/L-1225, pg 13
C-337-3.6	6,750		114,750	76,075	KY/L-821, Pt 5, pg 22
C-337-4.10	15,100	256,427	256,700		KY/L-1225, pg 85
C-337-4.6.1	3,700		62,900		KY/L-821, Pt 1, pg 7
C-337-4.4	3,720		63,240		KY/L-821, Pt 9, pg 7
C-337-4.2	7,000		119,000	125,460	KY/L-821, Pt 8, pg 7
C-337-5.1	4,150		70,550	70,550	KY/L-821, Pt 7, pg 18
C-337-6.7	19,270		327,590		KY/L-821, Pt 5, pg 22
C-337-6.10	18,340		311,780		KY/L-821, Pt 4, pg 16
C-337-6.8.8	25,700	436,437	436,900		KY/L-1225, pg 18
C-337-6.8	26,660	452,740	453,220		KY/L-1225, pg 20
C-337-6.6	25,200		428,400		KY/L-821, Pt 1, pg 7
C-337-6.2	34,100		579,700	422,932	KY/L-821, Pt 1, pg 7
C-335-4.6	47,000		799,000	799,000	KY/L-1225, pg 84
C-310 average	51,000		867,000	867,000	KY/L-1103, C-310 Barrier Analysis, 12/05/1980

Tc-99 2013/2014 Barrier Sample Results From C-310, C-331, C-335, and C-33

	Customer Sample ID	Paducah LIMS #	Location	Concentration Tc-99 (pCi/g)	Unit Avg - Tc-99 pCi/g Barrier	Unit Avg - Tc-99 pCi/g Converter
1	C-00758	C14181010001	C-331 Unit 4 Cell 3	6,160		
2	13041501	C13254002001	C-331 Unit 4 Cell 6	7,600		
3	C-00662	C14147005001	C-331 Unit 4 Cell 6	1,520		
4	C-00575	C14181011001	C-331 Unit 4 Cell 9	17,400	8,170	1,258
5	C-713	C14147004001	C-335 Unit 1 Cell 6	117,000	117,000	18,010
6	C-15207	C14147003001	C-337 Unit 1 Cell 6	1,930	1,930	351
7	C-15088	C14147007001	C-337 Unit 3 Cell 1	3,930	3,930	715
8	C-15485	C14147006001	C-337 Unit 5 Cell 3	2,790	2,790	507
9	13020401	C13035028001	C-337 Unit 6 Cell 3 Sample 1	2,140		
10	13020402	C13035030001	C-337 Unit 6 Cell 3 Sample 2	3,890	3,015	548
11	C-20096	C14147001001	C-335 Unit 4 Cell 1	10,200		
12	C-759	C14147002001	C-335 Unit 4 Cell 7	5,040	7,620	1,173
13	SP-1307	C12311014001	C-310 Cell 7 Sample 1	55,400		
14	SP-1308	C12311014002	C-310 Cell 7 Sample 2	191,000		
15	SP-1309	C12311014003	C-310 Cell 7 Sample 3	175,000		
16	SP-1310	C12311014004	C-310 Cell 7 Sample 4	321,000	185,600	27,172

Technical Review by P. Brown 9-15-15
Quality Review by M. Dek 9-15-15