uraniumone
investing in our energy

October 3, 2012

Attn: Document Control Desk
U.S. Nuclear Regulatory Commission
Mr. Keith J. McConnell, Deputy Director
Decommissioning & Uranium Recovery Licensing Directorate
Division of Waste Management & Environmental Protection
Office of Federal and State Materials &
Environmental Management Programs
Mailstop T8-F5
Washington, DC 20555-0001

Subject: License SUA-1314, Docket No. 40-8502
Willow Creek Project
Semi-Annual Effluent and Environmental Monitoring Report

Dear Mr. McConnell:

In accordance with 10 CFR 40.65 and per license conditions 12.1 and 12.6 of Source Materials License SUA-1341, please find enclosed the Semi-Annual Effluent and Environmental Monitoring Report for the period of January 1 through June 30, 2012.

Please contact me should you have any questions regarding this report. (307) 464-1427

Sincerely,

Larry Arbogast
Radiation Safety Officer

cc: Bill Kearney
Tim McCullough
Scott Schierman

Uranium One USA., Inc.
A Member of the Uranium One Inc. Group of Companies
tel +1 307-234-8235 • **fax** +1 307-237-8235
907 N. Poplar Street, Suite 260
Casper, Wyoming 82601
www.uranium1.com

Uranium One USA, Inc.
Irigaray and Christensen Ranch Projects

2012 SEMI-ANNUAL EFFLUENT AND MONITORING REPORT (NRC)

INTRODUCTION

In accordance with Sections 12.1 and 12.6 of the Nuclear Regulatory Commission (NRC) Source License No. SUA-1341, Uranium One USA, Inc. hereby submits the 2012 Semi-Annual Effluent and Monitoring Report. This document summarizes the required operational and environmental monitoring conducted at the Irigaray (IR) and Christensen Ranch (CR) projects from January 1, 2012 through June 30, 2012.

1.0 Results from Employee Urinalyses.

1.2 During the report period no bio-assay samples exceeded the 15 µg/l uranium action level. Samples are collected on a monthly basis from Plant operators, Wellfield operators, Lab personal, Wellfield maintenance personal and Electricians at the Christensen Ranch Site. At the Irigaray Process plant samples are collected on a monthly basis from the plant operators except during Yellowcake drying operations, samples are collected once per shift every four days. Sample analysis is conducted by an outside approved laboratory. Review of the sample data shows that samples were submitted consistent with Reg. Guide 8.22 as referenced in license condition 10.12.

2.0 OPERATIONAL MONITORING

2.1 Groundwater Volumes Injected and Recovered

A total of 819,886,083 gallons was injected and 849,229,451 gallons was recovered during the report period.

2.2 Injection Manifold Pressures

Injection manifold pressures at the CR project are limited to 140 psi during wellfield operations and 168 psi during maintenance tasks, as per License Condition 11.1. License Condition 11.1 requires that the injection manifold pressures be recorded daily. Uranium One uses continuous chart recorders on the injection manifolds, which record pressure 24 hours per day. The results are tabulated in graphical format and retained as permanent record at the CR offices. There were no pressure exceedances of the 140 psi limit during the report period.

3.0 ENVIRONMENTAL MONITORING

3.1 Regional Ranch Wells

Quarterly groundwater samples were collected from five ranch wells near the CR project and

one ranch well near IR. The samples were analyzed for Uranium, Thorium-230, Radium-226, Lead-210 and Polonium-210. The resulting data are presented in Table 1 of Appendix 1. All analytical results for radionuclides were at or near minimum detection levels (ND), which are consistent with historical data. Review of the analytical data indicates no upward trends were observed. Sampling was consistent with the requirements of License Condition 11.3 and Section 5.8 of the License Renewal Application.

3.2 Surface Water Monitoring

Willow Creek is the only source of surface water present within and adjacent to the permit boundaries of both the IR and CR projects. Willow Creek is an intermittent stream which was sampled on a quarterly basis. Three sample locations are designated at both project sites; upstream, downstream and within the permit boundary. The Powder River is also sampled annually at the Brubaker Ranch, which is approximately 4.5 miles downstream from its confluence with Willow Creek. Analytical data for both chemical and radionuclide parameters are provided in Table 2 of Appendix 1. All radionuclide data was at or near minimum detection levels, and no exceedances of NRC 10 CFR 20, Appendix B effluent limits occurred. Review of the analytical data does not indicate any upward trends for radionuclide or chemical parameter concentrations.

3.3 Spill and Leak Reports

There were five spills during the reporting period of January 1 through June 30, 2012. Reports to the WDEQ and NRC were sent on these spills and will not be duplicated in this report.

3.4 Soil and Vegetation Sampling

Annual soil and vegetation sampling as specified in License Condition 11.3 was completed on June 21, 2012. The analytical data from the sampling can be viewed in Table 9 of Appendix 1. No abnormal or upward trends were noted.

4.0 Air Monitoring

4.1 Radon Gas

Radon gas is monitored continuously at six environmental air sampling locations at or near the Irigaray Project and at five locations at or near the Christensen Ranch Project. Passive outdoor radon detectors are exchanged and analyzed quarterly by Landauer, Inc., a NVLAP accredited company. The sample analyses data are given in Table 3. No trends or abnormal results were noted and all concentrations were well below the 10 CFR Parts 20, Appendix B effluent limit for radon of 1E-10uCi/ml.

4.2 Dryer Stack Emissions

Uranium One resumed operation of the Yellowcake Dryer at the Irigaray Central Processing Plant on April 30, 2012. A Dryer Stack Emission test was done on June 13, 2012 by Optimal Air Testing Services. The test showed a release rate of 0.038 lb/hr, which demonstrates compliance with the allowable particulate emission rate of 0.30 lb/hr per the WDEQ Air Quality Permit OP 254. A summary of the total emissions released is in Table 8 of appendix 1.

4.3 Airborne Radionuclide's

During dryer operations, continuous airborne radionuclide sampling is required at the five specified environmental air sampling locations at the IR project. Results of this monitoring data can be seen in Table 4 of Appendix 1. The Yellowcake dryer was in operation from April 30, 2012 through the end of the report period.

4.4 Gamma Radiation Monitoring

Gamma radiation is monitored continuously at six environmental air locations surrounding the Irigaray Project and at five locations surrounding the Christensen Ranch Project. TLDs are exchanged and analyzed quarterly by Landauer Dosimetry Services, a NVLP accredited company. The environmental dosimeter data for the Irigaray and Christensen sites are presented in Table 5. No trends or abnormal results were noted.

4.5 Public Dose

Public dose determination will be provided as part of the second half 2012 effluent report. The off-shift operations personnel that utilize the man-camps for Irigaray and Christensen are used to demonstrate compliance with public dose limits, as these individuals have been identified as the member of the public likely to receive the highest dose from the Willow Creek Operations.

5.0 OTHER INFORMATION REQUIRED BY SECTION 12.6 - NRC LICENSE

5.1 ALARA Audit

The 2011 As Low As Reasonably Achievable (ALARA) audit was held on February 8, 2012 by Roger and Sheryl Garling of R and D Enterprises. The final report was not done at the time the Semi-Annual Effluent Report for 2011 was sent. The report is included in this report in Appendix 2.

5.2 Land Use Survey

The primary use of surrounding lands at both IR and CR projects continues to be rural sheep and cattle ranching. The livestock graze these lands, but fencing prevents access to the evaporation ponds, plant sites and wellfields.

The secondary use of surrounding lands continues to be petroleum production from wells dispersed throughout the region. The closest oil well at the CR project is located approximately one third of a mile west of the CR plant. The closest oil well at the IR site is located approximately one half mile east of the PU 9 wellfield. To our knowledge, no new oil wells have been drilled in close proximity to either project during 2012.

Over the past several years (2001 - 2012) some additional interest has developed in the immediate areas of the IR and CR projects in the development of coal bed methane (CBM) gas. Several CBM wells were drilled within a half-mile of CR MU 5 & 6 during 2002. At present these wells are in production.

The nearest residence to the IR site is 4 miles to the north (the Brubaker ranch) and the

nearest residence to CR is the John Christensen ranch located 3 miles southeast of the CR plant site. Both are ranch housing with a population of 6 or less. One new residence has been added at the Christensen ranch site. This is the man camp for the CR operators to stay in during off shift hours.

5.3 First Half of 2012 Site Inspections

5.3.1 During the report period no O.S.H.A. inspections were held.

5.3.2 During the report period the NRC held one inspection. On April 16, 2012 an announced routine inspection was held. Two violations were received. The violations were failure to perform surveys, as required by 10 CFR 20.1501(A) (2) (i) and b) contrary to the requirements of 10 CFR 20.1301(a) (2) the licensee did not conduct operations so that the dose in any unrestricted area did not exceed 2 millirem in any one hour. A response to the violations was sent by letter dated July 20, 2012 to the NRC with the corrective actions.

5.3.3 No inspections were held by the WDEQ during the report period.

5.4 First Half 2012 SERP Summary

Uranium One's Safety and Environmental Review Panel (SERP) [NRC License Condition 9.4 (C)] conducted six reviews during the first half of 2012. A summary of the SERPs is located in Table 7 of Appendix 1

5.5 Daily Walk –Through Inspections

Daily walk – through inspection are conducted at the Irigaray and Christensen Ranch locations. A summary of the daily inspections by week are located in Table 6 of Appendix 1.

APPENDIX 1

Data Tables 1-9

Table 1
Page 1 of 1
Uranium One USA, Inc. - Irigaray and Christensen Ranch Projects
2012 Semi-Annual Effluent Report
Sample Type: Regional Groundwater (Ranch Wells) -Quarterly Samples

Sample Location: Christensen Ranch House #3		
	2012	
	1st quarter March 14, 2012	2nd quarter June 20, 2012
Uranium	1.0E-8 (µCi/ml)	7.0E-9 (µCi/ml)
Thorium-230	N/D	N/D
Radium-226	1.5E-9 (µCi/ml)	1.5E-9 (µCi/ml)
Lead-210	1.3E-9 (µCi/ml)	1.0E-9 (µCi/ml)
Polonium-210	N/D	N/D

Sample Location: Christensen Middle Artesian		
	2012	
	1st quarter March 14, 2012	2nd quarter June 20, 2012
Uranium	9.8E-9 (µCi/ml)	9.9E-9 (µCi/ml)
Thorium-230	N/D	N/D
Radium-226	4.0E-10 (µCi/ml)	6.0E-10 (µCi/ml)
Lead-210	1.3E-9 (µCi/ml)	1.9E-9 (µCi/ml)
Polonium-210	N/D	N/D

Sample Location: Christensen Ellendale #4		
	2012	
	1st quarter March 14, 2012	2nd quarter June 20, 2012
Uranium	1.9E-9 (µCi/ml)	4.1E-10 (µCi/ml)
Thorium-230	N/D	N/D
Radium-226	7.0E-10 (µCi/ml)	9.0E-10 (µCi/ml)
Lead-210	N/D	N/D
Polonium-210	N/D	N/D

Sample Location: Christensen Del Gulch Lower #13		
	2012	
	1st quarter March 14, 2012	2nd quarter June 20, 2012
Uranium	No Sample	No Sample
Thorium-230	(Pump Down)	(Pump Down)
Radium-226		
Lead-210		
Polonium-210		

Sample Location: Christensen Willow Corral #32		
	2012	
	1st quarter March 14, 2012	2nd quarter June 20, 2012
Uranium	6.1E-10 (µCi/ml)	N/D
Thorium-230	N/D	N/D
Radium-226	7E-10 (µCi/ml)	5.0E-10 (µCi/ml)
Lead-210	N/D	1.6E-9 (µCi/ml)
Polonium-210	N/D	N/D

Sample Location: Christensen First Artesian Well #1		
	2012	
	1st quarter March 14, 2012	2nd quarter June 20, 2012
Uranium	2.0E-10 (µCi/ml)	N/D
Thorium-230	N/D	N/D
Radium-226	2E-10 (µCi/ml)	3.0E-10 (µCi/ml)
Lead-210	1.9E-9 (µCi/ml)	1.1E-9 (µCi/ml)
Polonium-210	N/D	N/D

Sample Location: Irigaray Willow # 2		
	2012	
	1st quarter March 14, 2012	2nd quarter June 21, 2012
Uranium	N/D	N/D
Thorium-230	N/D	N/D
Radium-226	2.0E-10 (µCi/ml)	N/D
Lead-210	N/D	N/D
Polonium-210	N/D	N/D

LLD's

Uranium	2.0E-10 µCi/ml
Thorium-230	2.0E-10 µCi/ml
Radium-226	2.0E-10 µCi/ml
Lead-210	1.0E-9 µCi/ml
Polonium-210	1.0E-9 µCi/ml

N/D = NON DETECTABLE

Table 2
Uranium One USA, Irigaray and Christensen Ranch Projects
2012 Semi-AnnualEffluent and Enviromental Monitoring Report
Sample Type: Surface Water (Quaterly Samples)

	Date	Uranium (µCi/ml)	Thorium 230 (µCi/ml)	Radium 226 (µCi/ml)	Lead 210 (µCi/ml)	Polonium 210 (µCi/ml)	Total Alkalinity (mg/L)	Chloride (mg/L)	TDS (mg/L	Specific Conductivity (umhos/cm)	Sulfate (mg/L)	pH (s.u.)	Arsenic (mg/L)	Selenium (mg/L)	Estimated Flow Rate:
Willow Creek IR-9 Downstream															
1st Quarter 2012	3/6/2012	5.9E-9	ND	4.0E-10	1.8 E-9	ND	196	13	710	1030	290	8.5	ND	ND	High
2nd Quarter 2012	No sample was taken - all dry														
		2.0E-10	2.0E-10	2.0E-10	1.0E-09	1.0E-09	5	1	10	5	1	0.1	0.005	0.005	
Willow Creek IR-14 Upstream															
1st Quarter 2012															
2nd Quarter 2012	No sample was taken - froze solid														
Willow Creek IR-17 Mine Site	3/6/2012	3.0E-9	ND	3.0E-10	1.5E-09	ND	248	5	530	804	139	8.4	ND	ND	High
1st Quarter 2012	No sample was taken - all dry														
2nd Quarter 2012		2.0E-10	2.0E-10	2.0E-10	1.0E-09	1.0E-09	5	1	10	5	1	0.1	0.005	0.005	
LLD															
1st Quarter 2012 (N/A)	No sample was taken - froze solid														
2nd Quarter 2012	3/6/2012	5.3E-9	ND	2.0E-10	1.9E-09	ND	206	6	640	930	227	8.2	ND	ND	High
LLD	No sample was taken - not flowing - just small pools of stagnant water														
		2.0E-10	2.0E-10	2.0E-10	1.0E-09	1.0E-09	5	1	10	5	1	0.1	0.005	0.005	

Estimated Flow Rate:
Low = <5cfs
Medium = 5 - 50 cfs
High = > 50 cfs

(Sample is taken Annually)

6/21/2012	ND	ND	5.0E-10	2.1E-09	ND	212	221	1510	2190	546	8.4	ND	ND	Medium
	2.0E-10	2.0E-10	2.0E-10	1.0E-09	1.0E-09	5	1	10	5	1	0.1	0.005	0.005	

Table 2
Uranium One USA, Irigaray and Christensen Ranch Projects
2012 Semi-AnnualEffluent and Enviromental Monitoring Report
Sample Type: Surface Water (Quaterly Samples)

	Date	Uranium (µCi/ml)	Thorium 230 (µCi/ml)	Radium 226 (µCi/ml)	Lead 210 (µCi/ml)	Polonium 210 (µCi/ml)	Total Alkalinity (mg/L)	Chloride (mg/L)	TDS (mg/L	Specific Conductivity (umhos/cm)	Sulfate (mg/L)	pH (s.u.)	Arsenic (mg/L)	Selenium (mg/L)	Estimated Flow Rate:
Willow Creek GS-01 Downstream															
1st Quarter 2012	3/6/2012	3.4E-9	ND	ND	2.1	ND	64	3	330	444	130	7.7	ND	ND	High
2nd Quarter 2012	No sample was taken - all dry														
LLD		2.0E-10	2.0E-10	2.0E-10	1.0E-09	1.0E-09	5	1	10	5	1	0.1	0.005	0.005	
Willow Creek CG-05 Upstream															
1st Quarter 2012	3/6/2012	4.1E-9	ND	3.0E-10	1.9E-09	ND	63	3	300	426	127	7.5	ND	ND	High
2nd Quarter 2012	No sample was taken - all dry														
LLD		2.0E-10	2.0E-10	2.0E-10	1.0E-09	1.0E-09	5	1	10	5	1	0.1	0.005	0.005	
Willow Creek GS-03 Mine Site															
1st Quarter 2012	3/6/2012	2.4E-9	ND	3.0E-10	3.2E-09	ND	63	3	300	413	119	7.5	ND	ND	High
2nd Quarter 2012	No sample was taken - not flowing - just small pools of stagnant water														
LLD		2.0E-10	2.0E-10	2.0E-10	1.0E-09	1.0E-09	5	1	10	5	1	0.1	0.005	0.005	

Estimated Flow Rate:
Low = <5cfs
Medium = 5 - 50 cfs
High = > 50 cfs

Table 3
URANIUM ONE USA Inc. - Irigaray and Christensen Projects
2012 Semi-Annual Effluent and Monitoring Report
Sample Type: Environmental Radon Gas

Location	1st Quarter 2012	2nd Quarter 2012	Location Average 2012	% of Pt. 20, App. B Effluent Conc. Limit
IRIGARAY PROJECT	uCi/ml	uCi/ml	uCi/ml	1 E-8 uCi/ml
IR-1 (Downwind of Restricted Area)	1.00E-09	4.00E-10	7.00E-10	7.00%
IR-3 (Upwind of Restricted Area)	9.00E-10	9.00E-10	9.00E-10	9.00%
IR-4 (North Road)	9.00E-10	9.00E-10	9.00E-10	9.00%
IR-5 (Irigaray Ranch)	7.00E-10	5.00E-10	6.00E-10	6.00%
IR-6 (Rigdge Road - S.E. - Background)	1.00E-09	9.00E-10	9.50E-10	9.50%
IR-13 (IR Employee House Trailer)	9.00E-10	6.00E-10	7.50E-10	7.50%
(IR-13 / nearest residence)	9.00E-10	6.00E-10	7.50E-10	8%
CHRISTENSEN PROJECT				
AS-1 (Table Mountain - Background)	9.00E-10	4.00E-10	6.50E-10	6.50%
AS-5A (CR Plant Upwind S.E.)	8.00E-10	7.00E-10	7.50E-10	7.50%
AS-5B (CR Plant Downwind N.W)	4.00E-10	8.00E-10	6.00E-10	6.00%
AS-6 (Christensen Ranch)	7.00E-10	9.00E-10	8.00E-10	8.00%
AS-7 (CR Employee House Trailer)	7.00E-11	6.00E-10	3.35E-10	3.35%
(AS-7 / nearest residence)	5.00E-10	6.00E-10	5.50E-10	6%

Quarterly Average	7.43E-10	6.76E-10

*** Sample voided (the detector had fallen on the ground)**
LLD = 0.3 pCi/l

Table 4
URANIUM ONE USA, Inc. - Irigaray and Christensen Projects
2012 Semi-Annual Effluent and Monitoring Report
Sample Type: Environmental Air Particulate (2nd Quarter)

Environmental Airborn Radionuclides (Weekly Composite) Start date 4/26/2012, End date 6/28/2012

	Uranium uCi/ml	Th-230 uCi/ml	Ra-226 uCi/ml	Pb-210 uCi/ml
IR-1 Downwind	8.40E-15	1.30E-16	3.50E-16	1.54E-14
%of Pt, App. B Effluent Limit	0.43%	0.43%	0.04%	2.57%
IR-3 Upwind	1.90E-14	1.30E-16	2.50E-16	1.60E-14
%of Pt, App. B Effluent Limit	0.97%	0.43%	0.03%	2.67%
IR-5 Brubaker Ranch	1.60E-15	N/D	2.00E-16	1.30E-14
%of Pt, App. B Effluent Limit	0.08%		0.02%	2.17%
IR-6 Background	2.90E-15	2.20E-16	2.50E-16	1.70E-14
%of Pt, App. B Effluent Limit	0.15%	0.73%	0.03%	2.83%
IR-13 Employee House Trailer	3.50E-15	1.50E-16	2.20E-16	1.60E-14
%of Pt, App. B Effluent Limit	0.18%	0.50%	0.02%	2.67%

N/D =Non Detectable

10 CFR Pt. 20, App. B, Effluent Limits (uCi/ml)

Uranium = 1.95E-12 (50%D & 50%W)
Th-230 = 3.0E-14 (Y)
Ra-226 = 9.0E-13 (W)
Pb- 210 = 6.0E-13 (D)

Lab LLD's

Uranium = 1.0E--16
Th-230 = 1.0E-16
Ra-226 = 1.0E-16
Pb-210 = 2.0E-15

Table 5
URANIUM ONE USA, Inc. - Irigaray and Christensen Projects
2012 Semi-Annual Effluent and Monitoring Report
Sample Type: Environmental Gamma Radiation

Location	1st Quarter 2012 mrem/quarter	2nd Quarter 2012 mrem/quarter	Location Average mrem/quarter
IRIGARAY PROJECT			
IR-1 (Downwind of Restricted Area)	5.9	11.5	8.7
IR-3 (Upwind of Restricted Area)	23.4	35.7	29.6
IR-4 (North Road)	5.8	8.3	7.1
IR-5 (Irigaray Ranch)	1.4	3.8	2.6
IR-6 (Ridge Road S.E. - Background)	5.7	10.2	8.2
IR-13 (I.R. Employee House Trailer) (nearest residence)	7.4	7.2	7.3
CHRISTENSEN PROJECT			
AS-1 (Table Mountain - Background)	7.2	6.4	6.8
AS-5A(CR Plant Upwind S.E.)	6.8	10.1	8.5
AS-5B (CR Plant Downwind N.W.)	6.6	10.1	8.4
AS-6 (Christensen Ranch)	9.2	13.5	11.4
AS-7 (C.R. Employee House Trailer) (nearest residence)	2.6	2.1	2.4
Quarterly Average	7.5	10.8	

Table 6

URANIUM ONE USA, Inc. - Irigaray and Christensen Ranch Projects
2012 Semi-Annual Effluent and Monitoring Report
Summary of Daily Walk-through Inspection of Radiation Control Practices being implemented appropiately

Irigaray Site				Christensen Site			
Date: Week	YES	NO	COMMENTS	Date: Week	YES	NO	COMMENTS
1/1/2012	X			1/1/2012	X		
1/8/2012	X			1/8/2012	X		
1/15/2012	X			1/15/2012	X		
1/22/2012	X			1/22/2012	X		
1/29/2012	X			1/29/2012	X		
2/5/2012	X			2/5/2012	X		
2/12/2012	X			2/12/2012	X		
2/19/2012	X			2/19/2012	X		
2/26/2012	X			2/26/2012	X		
3/4/2012	X			3/4/2012	X		
3/11/2012	X			3/11/2012	X		
3/18/2012	X			3/18/2012	X		
3/25/2012	X			3/25/2012	X		
4/1/2012	X			4/1/2012	X		
4/8/2012	X			4/8/2012	X		
4/15/2012	X			4/15/2012	X		
4/22/2012	X			4/22/2012	X		
4/29/2012	X			4/29/2012	X		
5/6/2012	X			5/6/2012	X		
5/13/2012	X			5/13/2012	X		
5/20/2012	X			5/20/2012	X		
5/27/2012	X			5/27/2012	X		
6/3/2012	X			6/3/2012	X		
6/10/2012	X			6/10/2012	X		
6/17/2012	X			6/17/2012	X		
6/24/2012	X			6/24/2012	X		

Table 7

Irigarary and Christensen Ranch Projects
Summary of SERP Actions

Year	Description	Revisions to License Application Text
2012 SERP 12-01	The purpose of SERP 12-01 is to evaluate and approve the Northeast Area of Mine Unit 8, Modules 81 and 82 for operations. Pursuant to License Condition 9.4 as specified in Source Materials License SUA-1341, Amendment 20 dated August 2, 2011, Uranium One may evaluate and implement certain changes in licensed operations without applying for an amendment to the NRC license. In the case of a new wellfield, the SERP will follow Standard Operating Procedures PBL-1, "Performance Based Licensing – NRC License", Revision R4 dated November 3, 2010 and PBL-2, Performance-Based License Condition: Review and Evaluation of New Wellfields", Revision R3 dated November 3, 2010 as part of the review process for the proposed action.	None
2012 SERP 12-01A	The purpose of this evaluation by the Uranium One Safety and Environmental Review Panel (SERP) is to review and approve the Northwest and Southeast Area of Mine Unit 8, Modules 83, 84, 85, 86 and 88 for operations. Please note that the SERP for the Northeast Area of Mine Unit 8 was conducted on January 27, 2012 and WDEQ/LQD approval for this action was received on January 4, 2012. NRC approval to begin lixiviant injection in Mine Unit 8 was received on January 24, 2012.	None
2012 SERP 12-02	The purpose of this evaluation by the Uranium One Safety and Environmental Review Panel (SERP) is to review the proposed organizational structure changes for the Willow Creek Project as related to Radioactive Materials License SUA-1341.	Revised Section 5 Corporate Organization and Administrative Procedures pages 5-1 through 5-4a of the Approved License Renewal Application. Revision to Figure 5-1 Organizational Chart page 5-4.

Table 7

Irigarary and Christensen Ranch Projects
Summary of SERP Actions

2012 SERP 12-03	The purpose of SERP 12-03 is to evaluate and approve the resumption of wellfield (production) operations at Mine Unit 5, Module 52. Discussions were held with the Willow Creek, NRC Project Manager, Ron Litton in regards to the possibility of resuming production activities at Mine Unit 5 in September of 2011 and as recently as February 2012. NRC is in agreement that resumption of production activities in Mine Unit 5 is an action that can be conducted by the Willow Creek SERP Committee and would not require a License Amendment.	None
2012 SERP 12-04	The purpose of this evaluation by the Uranium One SERP is to review the test or experiment regarding the use of a pod filter bag system as a replacement to current sand filter system at the Christensen Ranch Satellite plant.	None
2012 SERP 12-05	The purpose of this evaluation by the Uranium One Safety and Environmental Review Panel (SERP) is to review the proposed organizational structure changes for the Willow Creek Project as related to Radioactive Materials License SUA-1341.	Revised Section 5 Corporate Organization and Administrative Procedures pages 5-1 through 5-3 of the Approved License Renewal Application. Revision to Figure 5-1 Organizational Chart page 5-4.
2012 SERP12-06	The purpose of this evaluation by the Uranium One Safety and Environmental Review Panel (SERP) is to review and approve changes to operations resulting from the expansion to the Christensen Ranch Satellite Facility. Please note that the SERP for this action is that operations of the expansion is limited by SUA 1341, License Condition 10.5 until the NRC amendment allowing the flow to increase to 9000 gallons per minute (gpm) is received.	None. With the approval of flow increase amendment appropriate pages and figures in LRA have been submitted as part of the amendment request.

Table 8
URANIUM ONE USA, Inc. - Irigaray and Christensen Projects
2012 Semi-Annual Effluent and Monitoring Report
Sample Type: Dryer Stack Emissions Test

SUMMARY OF STACK EMISSIONS SURVEY RESULTS
Irigaray Dryer and Packaging Circuit

Survey month and year	Total Particulates lbs/hour (% limit)	U3O8 Emissions lbs / hour	Unat. Concentration uCi / ml	Th-230 Concentration uCi / ml	Ra-226 Concentration uCi / ml	Pb-210 Concentration uCi / ml
December 1994	0.074 (25%)	0.0047	3.06 E-10	6.7 E-13	7.75 E-13	2.33 E-12
March 1995	0.149 (50%)	0.0106	7.53 E-10	3.9 E-12	3.86 E-12	3.93 E-12
September 1995	0.167 (52%)	0.005	3.37 E-10	1.5 E-12	9.17 E-13	8.7 E-13
March 1996	0.056 (19%)	0.0041	2.92 E-10	1.13 E-12	1.51 E-13	1.13 E-12
September 1996	0.029 (10%)	0.0035	2.04 E-10	1.68 E-13	1.52 E-12	1.10 E-12
May 1997	0.057 (19%)	0.007	4.28 E-10	1.34 E-12	6.71 E-13	1.73 E-12
October 1997	0.065 (22%)	0.0123	6.80 E-10	1.88 E-12	1.86 E-12	4.23 E-13
May 1998	0.084 (28%)	0.0118	6.18 E-10	2.50 E-12	9.12 E-13	* NA
October 1998	0.035 (12%)	0.0063	3.08 E-10	1.21 E-12	1.54 E-12	2.94 E-11
June 1999	0.070 (23%)	0.0163	9.33 E-10	6.70 E-13	9.46 E-14	7.82 E-11
December 1999	0.014 (5%)	0.0107	6.67 E-10	9.01 E-14	1.53 E-13	2.73 E-12
May 2000	0.052 (17%)	0.0073	5.73 E-10	3.30 E-12	3.10 E-13	3.76 E-11
November 2001	0.071 (24%)	0.0082	6.36 E-10	< 1.42 E-12	< 6.51 E-13	< 4.35 E-13
January 2005	0.054 (18%)	0.0033	2.46E-10	1.19E-13	6.92E-14	2.91E-12
November 2011	0.041 (14%)	0.0087	8.80E-10	4.07E-12	2.37E-12	6.08E-11
June 2012	0.038 (13%)	0.0086	6.21E-10	<4.88E-10	<5.65E-10	4.09E-10
	Permit Limit 0.30					

COMMENTS:

* Pb-210 was not determined in May 98, because the sample was destroyed by the lab before the analysis was completed.

Table 9
URANIUM ONE USA Inc. - Irigaray and Christensen Projects
2012 Semi-Annual Effluent and Monitoring Report
Sample Type: Vegetation

Location	Uranium * uCi / Kg	Th-230 uCi / Kg	Ra-226 uCi / Kg	Pb-210 uCi / Kg
IRIGARAY PROJECT				
IR-1 (Downwind of Restricted Area)	3.20E-04	4.40E-06	5.02E-06	3.00E-05
IR-3 (Upwind of Restricted Area)	1.40E-03	1.90E-06	5.00E-06	1.07E-05
IR-4 (North Road)	5.06E-05	2.05E-06	3.07E-06	2.06E-05
IR-5 (Irigaray Ranch - nearest resident)	1.00E-05	1.70E-06	2.80E-06	1.70E-05
IR-6 (Ridge Road S.E.-IR Background)	6.40E-05	4.90E-06	5.00E-06	4.40E-05
CHRISTENSEN PROJECT				
AS-1 (Table Mountain - Background))	5.90E-05	5.70E-06	5..9E-6	2.70E-05
AS-5A (CR Plant Upwind S.E.)	6.60E-06	1.50E-06	3.40E-06	1.40E-05
AS-5B (CR Plant Downwind N.W.)	3.20E-05	3.50E-06	5.60E-06	2.90E-05
AS-6 (Christensen Ranch-Nearest Resident	8.40E-06	1.70E-06	3.80E-06	2.80E-05

Analyses performed by Inter-Mountain Laboratories, (IML), Sheridan, Wyoming
* The activity for uranium is a mathematical calculation based on a chemical analysis, therefore, no precision estimate (error) is given.
The Inter-Mountain Lab reporting limit (RL) is listed below are based on the weight of the samples.

RL's (uCi / Kg): Uranium = 2.0 E-7
Th-230 = 1.5 E-5 to 8.3 E-6
Ra-226 = 1.5 E-4 to 8.6 E-6
Pb-210 = 1.0 E-6

Table 9
URANIUM ONE USA Inc.- Irigaray and Christensen Projects
2012 Semi-Annual Effluent and Monitoring Report
Sample Type: Soil

Location	Uranium * uCi / gram	Th-230 uCi / gram	Ra-226 uCi / gram	Pb-210 uCi / gram
IRIGARAY PROJECT				
IR-1 (Downwind of Restricted Area)	4.90E-06	2.00E-07	5.00E-07	4.00E-07
IR-3 (Upwind of Restricted Area)	6.10E-06	2.00E-07	1.20E-06	2.50E-06
IR-4 (North Road - Background)	8.00E-07	6.00E-07	1.20E-06	1.30E-06
IR-5 (Irigaray Ranch - nearest resident)	7.00E-07	5.00E-07	6.00E-07	1.73E-05
IR-6 (Ridge Road S.E.)	2.20E-06	8.00E-07	1.10E-06	2.25E-05
IR-13 (Employee house trailer)	1.80E-06	7.00E-07	1.10E-06	2.70E-06
CHRISTENSEN PROJECT				
AS-1 (Table Mountain - Background))	1.60E-06	1.10E-06	1.30E-06	3.30E-06
AS-5A (CR Plant Upwind S.E.)	1.90E-06	2.00E-07	5.00E-07	7.00E-07
AS-5B (CR Plant Downwind N.W.)	1.30E-06	2.00E-07	4.00E-07	4.00E-07
AS-6 (Christensen Ranch-Nearest Resident	1.10E-06	2.00E-07	4.00E-07	1.50E-06
AS-7 (Christensen Employee house trailer)	9.00E-07	2.00E-07	4.00E-07	4.00E-07

Analyses performed by Inter-Mountian Labs (IML), Casper, Wyoming

* The activity for uranium is a mathematical calculation based on a chemical analysis, therefore, no precision estimate (error) is given.

IML reporting limits (uCi / g)
Uranium = 2.00E-7
Th-230 = 2.00E-7
Ra-226 = 2.00E-7
Pb-210 = 1.00E-6

APPENDIX 2

ALARA AUDIT

R AND D ENTERPRISES, INC.
PROVIDING ENVIRONMENTAL AND TECHNICAL SOLUTIONS
4495 SQUAW CREEK RD (82604) • P.O. BOX 3321 • CASPER, WY 82602
LAND 307.237.4188 • CELL 307.277.3861 • WWW.RDEINC.BIZ • RAGARLING@RDEINC.BIZ • SAGARLING@RDEINC.BIZ

March 30, 2012

Uranium One USA, Inc.
907 North Poplar ST, Ste 260
Casper, WY 82601

ATTN: Larry Arbogast
RE: Willow Creek Project 2011 Annual ALARA Audit, SUA-1341

Dear Mr. Arbogast:

The annual ALARA audit for the Willow Creek Project was conducted on-site February 9, 2012, with additional record reviews and a follow-up site visits on February 22 and March 30, 2012. The attached audit report includes summarized exposure data and documentation generated by the site radiation safety and health personnel.

All site personnel conducted themselves in a professional manner and their cooperation was greatly appreciated. If additional information is required regarding the audit findings, please do not hesitate to call.

We appreciate the opportunity to provide this service and look forward to working with you on future projects.

Sincerely,

Sheryl Garling

Sheryl Garling
President

A woman owned small business!

2011 ANNUAL ALARA AUDIT REPORT

AS LOW AS IS REASONABLY ACHIEVEABLE

UTILIZING REGULATORY GUIDE 8.31 AS GUIDANCE

URANIUM ONE USA, INC.

NRC LICENSE NUMBER: SUA-1341

907 NORTH POPLAR, STE 260

CASPER, WY 82601

March 30, 2012

Prepared By:

Sheryl and Roger A. Garling

R and D Enterprises, Inc.

P.O. Box 3321

Casper, WY 82602

307.277.3861

Executive Summary

The annual 2011 ALARA audit was performed on February 9, 2012 with additional follow-up site visits and conversations with the Radiation Safety Staff. Per Regulatory Guide 8.31, Section 2.3.3 Radiation Protection and ALARA Program Audit the review should address *trends in personnel exposures for identifiable categories of workers and types of operational activities, whether equipment for exposure control is being properly used, maintained, and inspected, and provide recommendations on ways to further reduce personnel exposures from uranium and its daughters.*

Trends - The start up of the Willow Creek ISR Project was on December 22, 2010 followed by dryer operations beginning September 30, 2011. The trends for 2011 charted represent average airborne uranium and radon daughter concentrations measured at the Irigaray Central Processing Plant and at Christensen Ranch Satellite Plant. The maximum 2011 Total Effective Dose Equivalent was 5.2% of the regulatory limit.

Equipment – Equipment used for monitoring occupational exposure is appropriate for the operation and application of use, is properly maintained and calibrated, and the Radiation Safety Staff demonstrated accurate and correct information on the use and operation of instrumentation.

Reducing occupational exposure recommendations – The Radiation Safety Staff continues to assess the operations and make recommendations for improvement using engineering techniques (ventilation, controls, etc.) to further reduce occupational exposures. Corporate and Site managers are committed to maintaining ALARA and the Radiation Safety Staff has the full cooperation of management regarding the protection of their employees from occupational exposure. Specific recommendations are identified within the ALARA report (bioassay, data storage, DOT shipping papers, data collection and repository system). A primary recommendation for the Radiation Safety Program improvement is the collection and storage of monitoring data to include an electronic format for review, trend analysis, reporting and storage.

The current Radiation Safety Program complies with NRC requirements and recommendations. The effectiveness of the program was confirmed during the 2011 dryer incident. The NRC's special investigation conclusion was that...*No employee exceeded the regulatory limit for occupational exposures due to the incident. Radiological surveys and environmental monitoring showed that no radioactive material was released from the facility above regulatory limits.*

ALARA Audit Report

As identified in Regulatory Guide (RG) 8.31, Revision 1, May 2002: *Information Relevant To Ensuring That Occupational Radiation Exposure At Uranium Facilities Will Be As Low As Is Reasonably Achievable* (ALARA), Section 2.3.3 *Radiation Protection and ALARA Program Audit.*

The audit team comprised of Sheryl Garling and Roger A. Garling of R and D Enterprises, Inc. (RDE) was accompanied by Uranium One USA, Inc. Willow Creek Project's Irigaray Plant & Christensen Ranch Satellite Radiation Safety Officer (RSO), Larry Arbogast and Radiation Safety Technician (RST) in Training, Donny Whipple. The following identifies the findings of the February 9, 2012 ALARA audit at the Willow Creek Project uranium in-situ recovery facility located in Johnson and Campbell Counties, Wyoming. This audit serves as the annual review of the content and implementation of the radiation protection program for 2011 as required by 10 CFR Part 20.1101(c).

Prior to, during and post audit visit, the following documents were reviewed:

- ✓ ALARA audit reports from 2009 and 2010,
- ✓ USNRC License SUA-1341;
- ✓ Regulatory Guides and other relevant documents including, but not limited to, 1.86, 8.10, 8.22, 8.30, 8.31, etc.
- ✓ USNRC Inspection Reports (and notice of violation) 040-08502/11-001 (June 17, 2011), 040-08502/11-002 (October 28, 2011) and 040-08502/11-003 (December 28, 2011),
- ✓ 10 CFR Part 20,
- ✓ NUREG-1400,
- ✓ Monthly Radiation Safety Summary Reports, and
- ✓ Spot-checked site records and reports generated by the site Radiation Safety Officer and Health Physics staff

ALARA Philosophy – Regulatory Guide 8.31, Section 1:

A major purpose of the occupational radiation protection program at a uranium recovery facility is to maintain radiation exposure ALARA for all employees, contractors and visitors. The implementation and effectiveness of a successful ALARA program is the responsibility of everyone involved in the processing of uranium ores. Responsibilities for conducting a radiation protection and ALARA program are shared by licensee management, the radiation safety officer and all workers in the uranium recovery facility.

The ALARA program is predicated on timeliness of sampling, measurement and documentation of occupational and effluent monitoring. RG 8.30 recommends... *Sample analysis should usually be completed within two working days after sample collection*...to determine employee occupational exposures.

Radiation Protection and ALARA Program Audit – Regulatory Guide 8.31 Section 2.3.3:

1.0 Employee Exposure Records

The Total Effective Dose Equivalent (TEDE) is defined as the sum of the Deep Dose Equivalent (DDE, for external exposures) and the Committed Dose Equivalent (CDE, for internal exposures). The dose limit for TEDE (TEDE = DDE + CDE (CEDE)) is 5 rem/year. [RG 8.30]

Uranium One USA, Inc. commenced operations in Mine Unit 7 December 22, 2010 with dryer operations starting on September 30, 2011.

Historically, employee exposures have been very low due to stand-by operations, non-operational or renovation mode. In 2011, the maximum TEDE employee exposure was 0.26 rem, representing 5.2% of the 5 rem annual limit. The breakdown of this exposure was 0.08 external (DDE) and 0.18 internal due to radon daughters and airborne uranium (CEDE). There were 51 employees on site in 2011 of which 14 were designated as office staff and 37 employees designated as ISL staff represented by the above TEDE summary.

The average employee exposure in rem for TEDE (0.086), DDE (0.015) and CEDE (0.071) exposure data indicates that ALARA goals are meeting regulatory levels.

2011 Employee Exposure Summaries				
Exposure Category	Rem		% of Regulatory Limit (Limit = 5 Rem/year)	
	Average	Maximum	Average %	Maximum %
External (DDE)	0.015	0.08	0.3	1.6
Radon (CEDE)	0.066	0.17	1.3	3.4
Airborne Uranium (CEDE)	0.005	0.01	0.1	0.20
Internal CEDE	0.071	0.18	1.4	3.6
Total Equivalent Dose Equivalent (DDE+CEDE = TEDE)	0.086	0.26	1.7	5.2

2.0 Bioassay Results:

There were 8 bioassay results in 2011 reported in excess of 5 ug/L of which 2 were reported in excess of 15 (16.4 and 16.3). After a thorough investigation, no significant employee exposures (inhalation or ingestion) were determined to have resulted due to the elevated sample analysis. Elevated bioassays were reported in February, May, July, August (2 times), September, October and December.

Spiked samples are prepared in accordance with RG 8.22, one at 10-20 ug/L and one 40-60 ug/L, and submitted monthly. The SOP should be revised to reflect that the monthly sampling delivery group reflects Section 8.1 requirements of a *specimen batch for spiked sample submittal.*

The Bioassay Standard Operating Procedure (SOP) HP-4, Revision 5, Bioassay Program should be reviewed and revised to include third party laboratory guidance procedures when elevated bioassay results are reported. The SOP should identify the protocol that Uranium One requires for analytical rechecks on samples with results of >5 ug/L, such as requiring triplicate verification recheck immediately upon the initial result measurement. In addition, protocol should be identified to address the occurrence when a spiked sample result is reported outside of the prescribed 30% QA limit. This may include additional reruns at the request of the RSS to the third party laboratory facility.

During the first full year of uranium production operations, the RSS collected bioassay samples from personnel performing routine and non-routine operational tasks. The RSS utilized a conservative approach in determining bioassay monitoring frequency to provide information on task specific activities that could result in potential employee exposure. The observations provided understanding of the activities so that the RSS could develop historical inventory of work tasks and employee's personal hygiene habits that could result in potential employee occupational exposure. The RSS has indicated that they will begin to assess the bioassay sampling program and systematically reduce sampling events, as work activities are included in the SOPs, which will identify the use of air particulate action level limits to assess the need for, or waiver of, bioassay sampling analysis for work tasks.

Areas that need to be reviewed are:

- ✓ Reduction in CR employee bioassays to operators that maybe affected by activities where there is a potential for airborne particulate exposure;

- ✓ The third party laboratory should provide documentation of their lower limit of detection to meet the <5 ug/L reporting limit;
- ✓ Develop a corrective action criteria and guidance for analytical results ≥ 5 and 15 ug/L;
- ✓ Review RG 8.22 regarding spiked sample submittals which states *per batch*; unless Willow Creek Project's SOPs specifically identifies that batches are unlimited number of submittals per month;
- ✓ The offsite laboratory analyzes 10-20% of sample submittals as duplicates and reports with bioassay results.

3.0 Inspections log entries and summary reports of daily, weekly and monthly inspections:

The RSO or designee, such as department supervisors or function specific trained personnel, etc. perform daily inspections of their area and provide reports to the RSS and Safety, Health and Environmental (SHE) staff. Due to NRC stipulations cited during a previous inspection, the RSS cannot allow their designee to perform inspections more than three (3) consecutive days. The RSO or RST or trainee designee performs weekly inspections. The RSS determines if additional considerations are required to complete and close any items identified that requires attention. Forms are provided for specific inspection tasks to document all mandatory information and space is provided for additional observed information. Logbooks are maintained at both facilities covering each 12-hour shift. The SHE staff routinely reviews the logbooks. The Monthly Radiation Safety Reports provide a summary of observed issues resulting from these inspections. The majority of the inspection issues pertain to security: door latches broken, unsecured access, etc. The RSS is vigilant on maintaining a safe, well-maintained, clean working environment evidenced by the inspection reported topics.

The following are incidents that were documented and remediated: yellowcake spills, sump issues, resin spills, tank overflows, area signage and yellowcake dryer sand seal failure.

In addition to the above operational inspections, the following are also being performed on a routine basis:

- ✓ Annual USNRC on-site inspections,
- ✓ Annual ALARA audit,
- ✓ Annual review of the SOP,
- ✓ Routine in-house radiation safety/protection audits
- ✓ Uranium One, USA, Inc. internal corporate audits.

At this time, document storage is retained for the life of the project.

Document storage was addressed in the 2010 ALARA report with a recommendation that the records be kept in a leak and rodent proof containment. Currently, storage of all hard copy records is maintained on site.

Development of a corporate wide electronic storage system may be warranted due to the requirement of maintaining records for as short as three (3) years to as long as the life of the project or until the license condition is removed. Electronic record retention and organization should be maintained on a designated system so that documents can be controlled and efficiently acquired. This type of system could be instituted as a corporate wide initiative to allow corporate and site management immediate access to information.

4.0 Documented training program activities

Initial and annual refresher training is performed for all personnel associated with ISR process operations. Quarterly safety meetings are held and training includes a wide variety of site-specific relevant topics to include all aspects of the uranium recovery operation, environmental, occupational exposure, radiation safety, SOPs, etc. Meetings that exclusively pertain to radiation safety/protection (to include respirator training and medical checks) were held in February and March 2011. The RSS provides initial and annual respirator training, performs fit tests and maintains the respirator equipment. The annual refresher training was performed in February of 2011. Donnie Whipple and Scott Schierman are currently providing the radiation safety site support under the RSO's direction. Training requirements listed in RG 8.31 Section 2.4, *Technical Qualifications of Health Physics Staff* are used as guidelines for Willow Creek Project RSS. The RSS is current on training that includes Department of Transportation (DOT) transportation and packaging of radioactive materials, radiation instrument workshop, Porta-Count Quantitative fit test and RSO refresher training. The RSO attended Bevis Respirator Consultants 40-hour training course the first quarter of 2012. The RST in training is scheduled to attend a 40-hour Radiation Safety Officer class in 2012.

DOT Hazardous Materials Transportation General Awareness and Security training has been added to the site safety-training program. New employees, working in these areas, require training

for General Awareness, Security and function specific activities within 90 days. This program has been incorporated into the radiation safety/protection and safety programs.

5.0 Radiation safety meeting reports (Related Section 3.0 & 4.0):

All meetings are documented and records are maintained on site in the custody of the Industrial Safety Supervisor/RSO.

6.0 Radiological survey and sampling data:

Radiation measurement and survey equipment for occupational exposure monitoring and control is being properly used, maintained and inspected. A spot-check of survey equipment/instrument calibration documents was performed and confirmed equipment is taken out of service by the calibration expiration date and instrument calibration is performed by third party companies. The internal and external calibration and measurement data is maintained and well organized by the RSS. Hard copies are filed and maintained on site.

6.1 Alpha Contamination Swipes/Smears:

6.1.1 Respirator Contamination Survey:

Swipes are taken whenever respirators are removed and before they are reused. The operators are tasked with performing the swipes if the RSS is not available; however, the RSS performs the counting and documentation of the measurement. The PAPR's hoods are used for a four-day shift with no issues being documented for 2011.

The USNRC Inspection Report 040-08502/11-003, December 2011, reported the following: *The NRC inspector reviewed the training, medical approval, and documentation of respirator fit testing for all personnel and found them to comply with license commitments. The training records for the contractors were also reviewed and found to be sufficient.*

6.1.2 Non-Restricted Area Removable Alpha Surveys:

Monthly removable alpha contamination surveys are performed at both facilities. The RSO reviews the documentations and includes his findings in the monthly reports. No trends in alpha contamination were identified. The maximum removable alpha values observed within the facilities were 120 dpm/100 cm^2 at Irigaray Central Processing Plant and 30 dpm/100 cm^2 at Christensen Ranch Satellite Facility.

6.1.3 Personnel Alpha Surveys:

Alpha Contamination Surveys are conducted in accordance with SOP HP-1, Revision 7, Alpha Contamination Monitoring for Release From a Restricted Area. Personnel released to an unrestricted area are covered under this SOP. The RSS routinely reviews the personnel survey measurements documented at the exit locations of the controlled access areas of the facilities. The Willow Creek Project has the following personnel alpha contamination monitoring stations: CR Plant - 4, CR Construction Areas – 2, CR Lab – 1, IR Plant – 4.

When release limits are exceeded, employees are required to document the area and decontamination required and follows up with a resurvey of that area. The RSO has been diligent in providing routine training to staff as to the critical nature of the alpha contamination survey, proper documentation of measurements and decontamination. A spot-check of the records confirmed that employees were providing the information on decontamination and resurvey measurements were recorded when an elevated reading (above release limits) was observed.

The ALARA 2010 report recommended that the RSO review the SOP HP-14, Revision 6, *Radiation Survey Instrument Calibration and Performance Check* to reflect the current operations of weekly instrument checks and that release count rates are posted for each alpha meter station. This recommendation has been addressed and the SOP has been revised to reflect the current operations.

6.2 Airborne Uranium:

Monthly airborne sampling is performed in accordance to SOP HP-6, Revision 9, *Airborne Uranium Survey*. The maximum airborne uranium values observed were:
4.94 E^{-12} uCi/mL at the Irigaray Central Processing Plant, which represented 1.1% of the established site DAC of 4.7E-10 uCi/ml; and
2.40 E^{-12} uCi/mL at the Christensen Ranch Satellite Plant, which represented 0.5% of the DAC, 5 E^{-10} uCi/ml.

6.3 Radon Progeny:

Radon Daughter Concentration sampling is conducted in accordance with SOP HP-7, Revision 7, *Radon Daughter Survey*. The maximum radon progeny measurements observed at the facilities were:

0.048 WL, which represented 14.5% of the DAC of 0.33 WL at the Irigaray Central Processing Plant; and
0.0.039 WL, which represented 11.8% of the DAC of 0.33 WL at the Christensen Ranch Satellite Plant

Routine monthly radon sampling includes Irigaray central Processing Plant, Christensen Ranch Facility Plant and the wellfield header (Mod) houses. Elevated radon daughters were measured in Mod Houses 7-3 and 7-4. It was determined that the radon daughters were being liberated during changing out of the sock filter media. Wall fans were installed in the buildings and the SOP was established, which identified that the fans were to be turned on prior to changing sock filters.

Elevated radon daughters were discovered at the Irigaray Central Processing Plant during a resin transfer event. On March 20, 2011 SERP 11-04, Irigaray Plant Vent for Resin Transfer Water Storage Tank, was established and placed into operations.

6.4 External Gamma Surveys:

6.4.1 Area Gamma Surveys:

Due to the commencement of the restart of the operation, monthly external gamma surveys were conducted in accordance with SOP HP-2, Revision 2, *Gamma Exposure Rate Survey*. The elevated gamma at the Irigaray Central Processing Plant was located in the yellowcake storage room. In 2011, the drummed yellowcake storage area was identified as a radiation area due to the storage of approximately 300 drums of yellowcake currently waiting for approval to be shipped to Canada. The maximum external gamma value observed at the Irigaray Central Processing Plant was 6 mrem/hr. The area was designated and posted as a Radiation Area (>5 mrem/hr) per 10 CFR Part 20.1902 Posting Requirements. Once the drums are shipped for processing, the gamma measurements are expected to return to normal operation levels. The maximum reading observed at the Christensen Ranch Satellite Facility Plant was and 3.1 mrem/hr, which is less than the 5 mrem/hr posting limit.

6.4.2 Personnel Dosimetry:

In 2011 a maximum of 39 ISR employees were assigned OSL badges that were analyzed quarterly. The maximum personnel OSL dosimeter quarterly exposure reported was 35 mrem representing 2.8% of the quarterly 1250 mrem limit.

6.5 External Beta Surveys:

Beta surveys are conducted annually in accordance with SOP HP-31, Revision 1, *Beta Exposure Survey*. The RSS determined that an increase in frequency was warranted due to the current situation of storing ~300 drums of product. Currently, the shipment of product is scheduled for the second quarter of 2012.

At the Christensen Ranch Facility, the highest beta measured was 0.15 mrem/hr on the sock filter canister located in the Wellfield Mod building 7-5.

At the Irigaray Central Processing Plant, less than detectable (0.1 mrem/hr) was the beta exposure measurement observed in the product storage area.

RG 8.30 identifies that *...beta surveys of specific operations that involve direct handling of large quantities of aged yellowcake are advised to ensure that extremity and skin exposures for workers who will perform those operations are not unduly high...*Handling of aged yellowcake will only occur when shipping commences and the drums are loaded in the transport vehicles.

6.6 Radiation Work Permits (RWP):

Radiation Work Permits are conducted in compliance with SOP HP-11, Revision 8, Radiation Work Permits, with 127 RWPs issued in 2011. Due to the commencement of the restart of operations, the RSS reasoned on the side of conservatism regarding the issuance of RWPs. The RSS is working through the operation activities and will be establishing new and updating old SOPs to reflect routine activities and addressing the required monitoring to assure ALARA.

A spot-check evaluation of the RWP documentation was made and it was determined that the RWP procedures were being followed in accordance with RG 8.31, Section 2.2 which complies with License Condition 10.9.

The ALARA 2010 report recommended that the RSO review the SOP HP-14, Revision 6, *Radiation Survey Instrument Calibration and Performance Check* to reflect the current operations of weekly instrument checks and that release count rates are posted for each alpha meter station. This recommendation has been addressed and the SOP has been revised to reflect the current operations.

6.7 Equipment Release:

Equipment Release Surveys are conducted in accordance with SOP HP-10, Revision 6, Equipment or Material Released to Unrestricted Areas. The RSS is vigilant on maintaining the release of material to unrestricted areas ALARA.

A spot check of the survey documentation recorded for the release of equipment to an unrestricted area was made and found to be in order and in compliance with License Condition 9.8.

6.8 Byproduct Material Shipments: LC 9.7

SOP HP-19, Revision 5, Shipping Radioactive LSA Materials is followed when shipping byproduct material to a third party for disposal. Six (6) consignments of byproduct waste material were shipped to Pathfinder's Shirley Basin tailings facility. The radiation safety staff has instituted a procedure to provide strategically placed containers assessable to operators that allows for efficiency in disposing of byproduct material. Records were reviewed and this task complies with the criteria of License Condition 9.7.

As identified in the 2010 ALARA report the disposal agreement will expire at the end of 2013.

It is recommended that shipping documents be revised to reflect the correct hazardous material Proper Shipping Name (PSN) listed in 49 CFR Part 172.101. In addition, the shipping documentation sequence should be changed to reflect the new requirement of UN Number, PSN, Hazard Class and Packing Group (Packing Group is not required by DOT for Radioactive Materials). The phase in period for the shipping paper sequence will end January 1, 2013.

6.9 Dose to the Public:

The licensee evaluates dose to the public utilizing data collected at the offsite residence housing provided by Uranium One USA, Inc. for operators assigned to shift work. Data is documented in the Semi-Annual Effluent Monitoring Reports with radon gas, without daughters, measured at 5.4% of 10 CFR Part 20 Appendix B, Effluent Concentrations ($1E^{-8}$ uCi/mL) and 3.2% for gamma radiation (compared to 100 mrem public standard).

The majority of the analytical data generated on site, supporting the radiation safety program for occupational exposure calculations are performed by hand. Spot checks of calculations were made and no errors were identified. As Uranium One USA, Inc. operations expand, they may consider

the implementation of an electronic data repository (database, etc.) to store data and information related to the radiation safety program. This type of system may aid in reducing the turn-around-time of recording measurements and exposures, and may allow the RSS tools to perform their tasks more efficiently. In addition, corporate staff would have real time access to employee and environmental records.

6.10 Reports on overexposure of workers submitted to the NRC or OSHA:

There were no employee overexposures measured during 2011.

7.0 Operating procedures that were reviewed during this time period

The review process for the SOPs started in December 2010 and completed during the first quarter of 2011. The SOP review process commenced in December 2011 and is currently in progress. The review process complies with the License Condition 9.6.

7.1 SERPS

The following table represents the Safety and Environmental Review Panel (SERP) proposed changes evaluated during 2011. License Condition (LC) 9.4(b) allows Uranium One USA, Inc. to make changes in the facility or procedures or conduct tests or experiments that are not presented in the approved application as long as such changes follow the specified criteria identified in the LC.

Date	SERP ID	Proposed Changes
March 2, 2011	Evaluation Report – SERP 11-01	Christensen Ranch Vent System RO-4 Feed Line
March 3, 2011	Evaluation Report – SERP 11-02	Air Sample Location Based on 2010 Air Flow Study
May 16, 2011	Evaluation Report – SERP 11-03	Christensen Ranch Addition of Bi-carbonate at Header Houses on Temporary Basis
May 20, 2011	Evaluation Report – SERP 11-04	Irigaray Plant Vent for Resin Transfer Water Storage Tank
July 19, 2011	Evaluation Report – SERP 11-05	Willow Creek SHE Organizational Structure Change

7.2 Review of USNRC Inspection Reports

a. USNRC Inspection Report and Notice of Violation 040-08502/11-001 (June 17, 2011)

✓ Two Severity Level IV violations were identified;

- DOT Training of hazmat employee in compliance with 49 CFR Part 172.704(a) and 49 CFR Part 172.204(c)

- LC 10.11 an employee did not properly survey prior to exiting the restricted area

✓ One self identified, Non-Cited violation, relating to the failure to perform bi-weekly sampling of monitor wells

b. USNRC Special Inspection Report 040-08502/11-002 (October 28, 2011)

✓ The inspection was a result of a sand seal failure in the dryer. *The inspector determined that the incident did not meet any threshold requiring a report to the NRC. This was consistent with the licensee's reportability determination (Section 4.2b).*

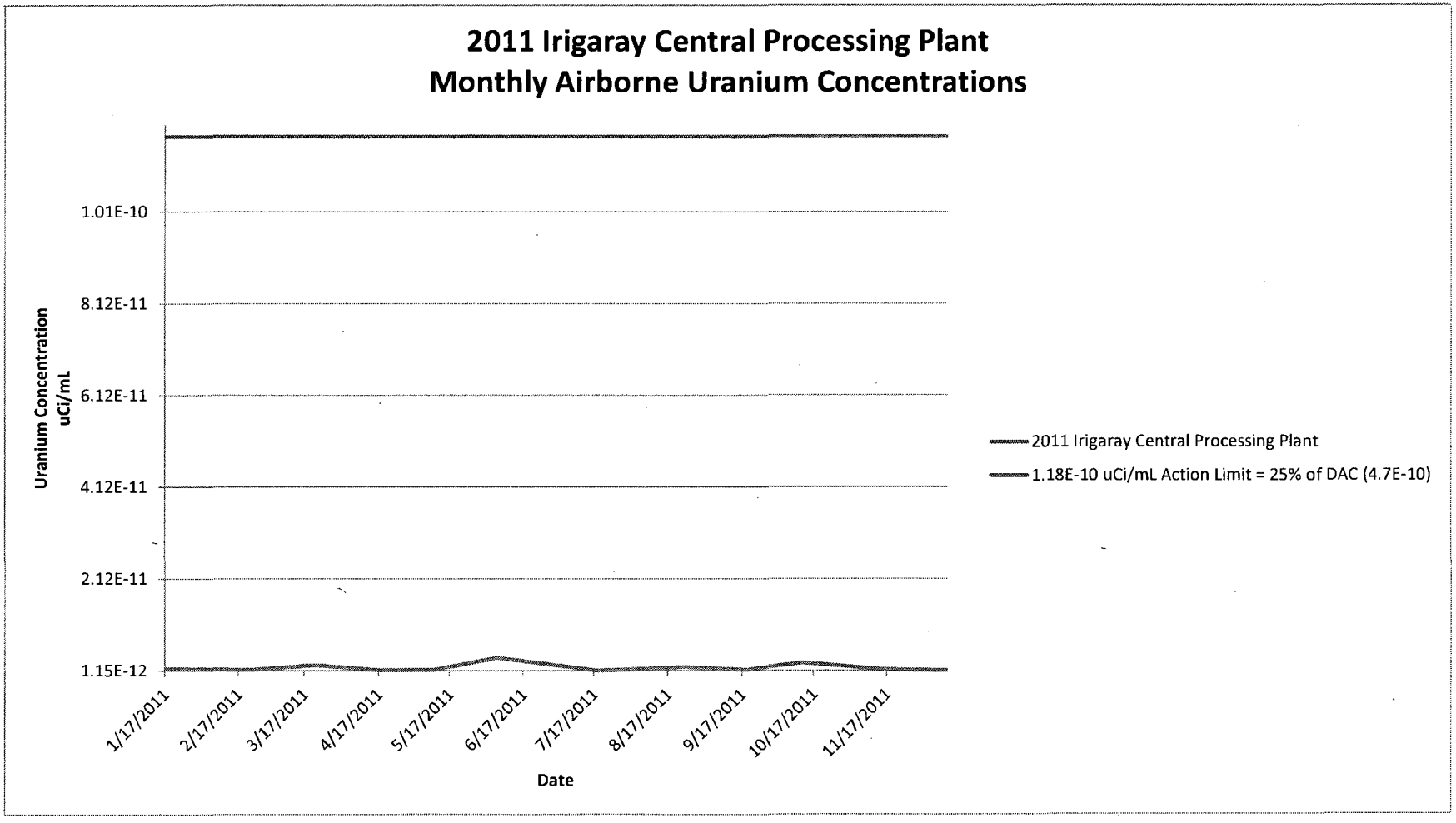
c. USNRC Inspection Report 040-08502/11-003 (December 28, 2011)

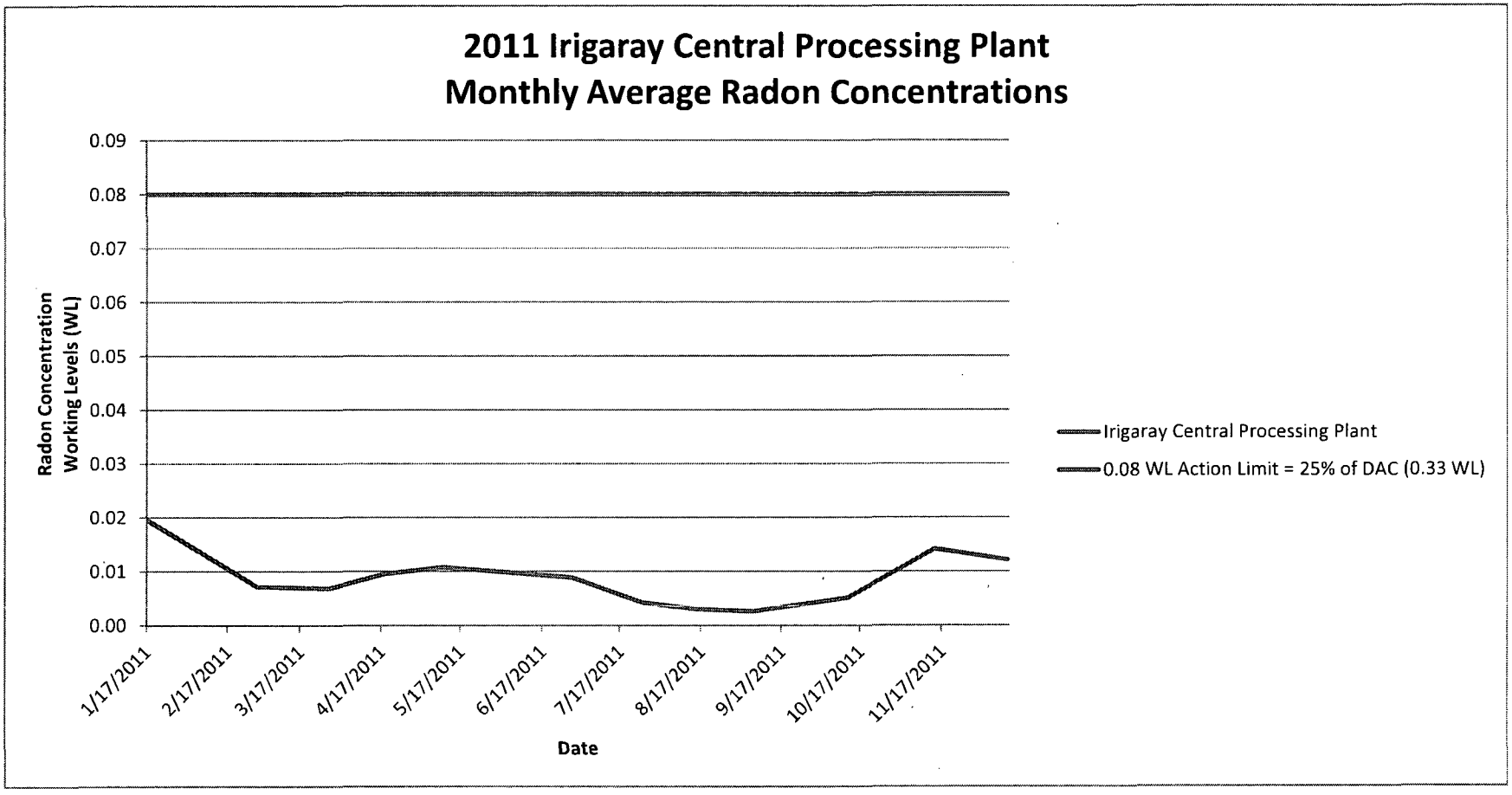
✓ Reviewed dryer sand seal documentation for repair, maintenance procedures and preventive measures, with operations observations planned for future inspection, inclement weather prohibited inspectors to directly observe dryer operations

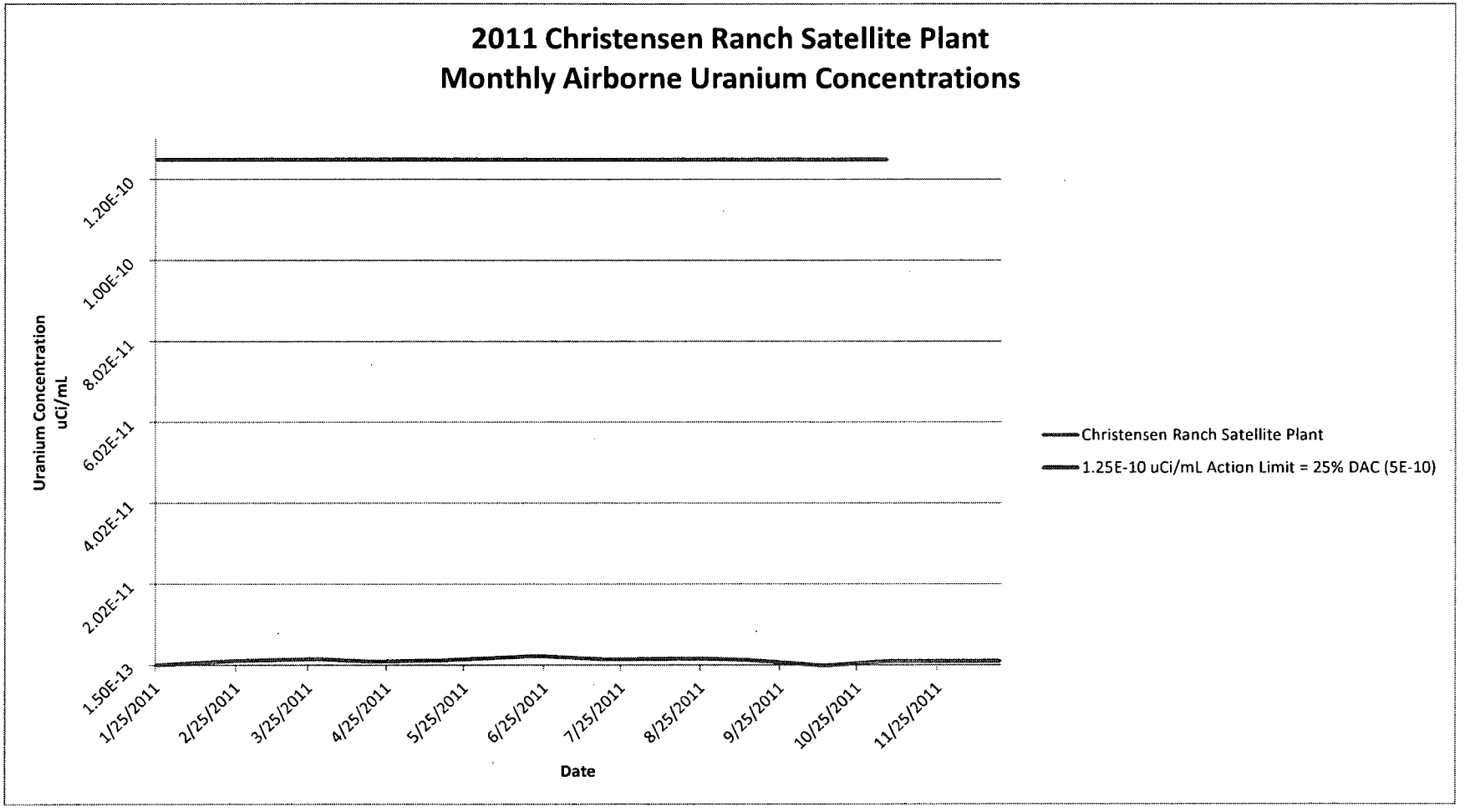
✓ Violations from 040-08502/11-001 were closed

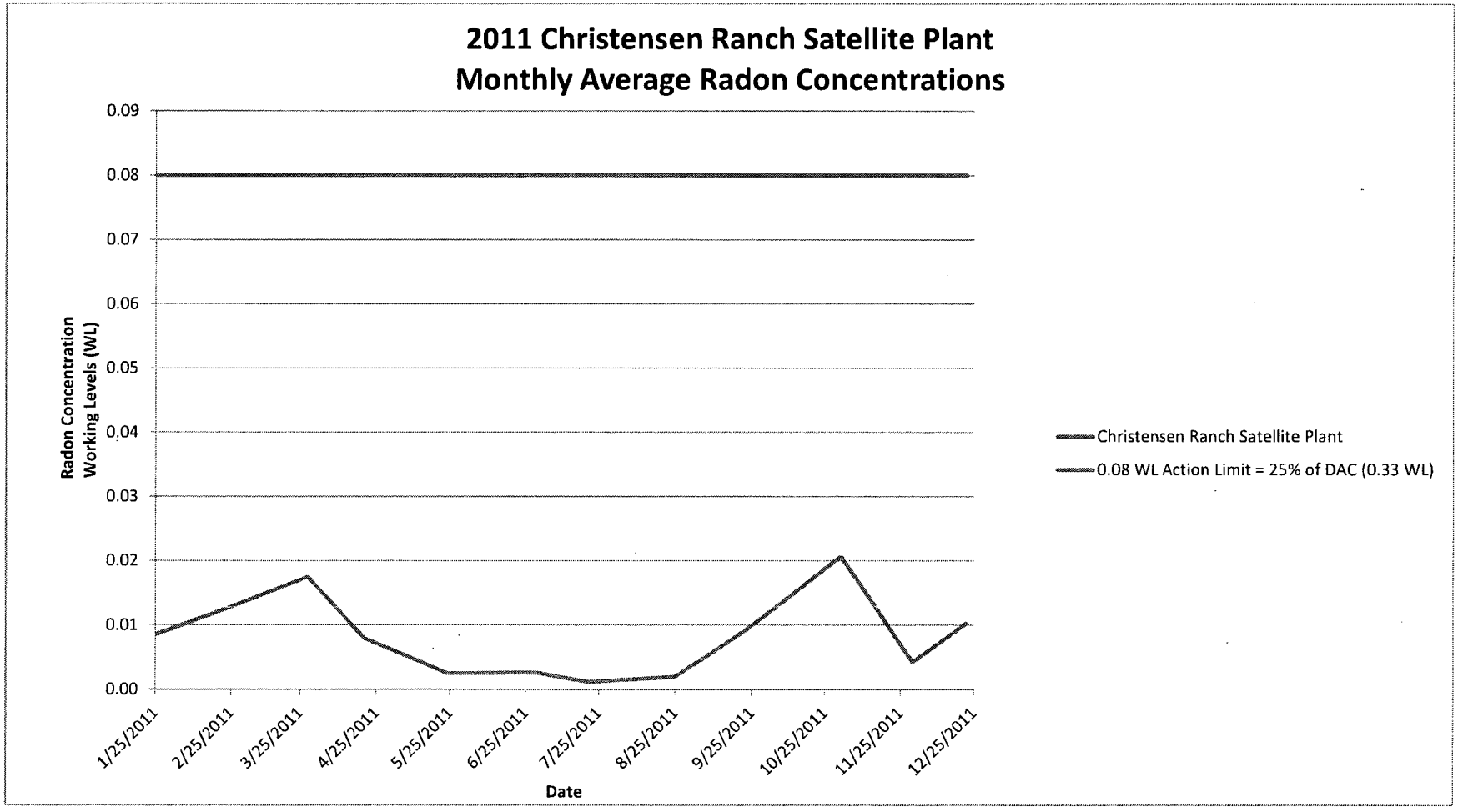
8.0 Charts

The following charts identify 2011 Irigaray Central Processing Plant and Christensen Ranch Satellite Facility Plant airborne uranium and radon progeny measurements. Site area data will be reviewed to ascertain if additional charts would be beneficial for trend analysis of occupational or effluent monitoring.


2011 Irigaray Central Processing Plant
Monthly Airborne Uranium Concentrations
Uranium Concentration uCi/mL
1.01E-10
8.12E-11
6.12E-11
4.12E-11
2.12E-11
1.15E-12
1/17/2011
2/17/2011
3/17/2011
4/17/2011
5/17/2011
6/17/2011
7/17/2011
8/17/2011
9/17/2011
10/17/2011
11/17/2011
Date
2011 Irigaray Central Processing Plant
1.18E-10 uCi/mL Action Limit = 25% of DAC (4.7E-10)


2011 Irigaray Central Processing Plant
Monthly Average Radon Concentrations
Radon Concentration
Working Levels (WL)
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
1/17/2011
2/17/2011
3/17/2011
4/17/2011
5/17/2011
6/17/2011
7/17/2011
8/17/2011
9/17/2011
10/17/2011
11/17/2011
Date
Irigaray Central Processing Plant
0.08 WL Action Limit = 25% of DAC (0.33 WL)


2011 Christensen Ranch Satellite Plant
Monthly Airborne Uranium Concentrations
Uranium Concentration uCi/mL
1.20E-10
1.00E-10
8.02E-11
6.02E-11
4.02E-11
2.02E-11
1.50E-13
1/25/2011
2/25/2011
3/25/2011
4/25/2011
5/25/2011
6/25/2011
7/25/2011
8/25/2011
9/25/2011
10/25/2011
11/25/2011
Date
Christensen Ranch Satellite Plant
1.25E-10 uCi/mL Action Limit = 25% DAC (5E-10)


2011 Christensen Ranch Satellite Plant
Monthly Average Radon Concentrations
Radon Concentration Working Levels (WL)
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
1/25/2011
2/25/2011
3/25/2011
4/25/2011
5/25/2011
6/25/2011
7/25/2011
8/25/2011
9/25/2011
10/25/2011
11/25/2011
12/25/2011
Date
Christensen Ranch Satellite Plant
0.08 WL Action Limit = 25% of DAC (0.33 WL)

FedEx Express

From: (307) 234-8235
Stephanie Aurelius
Uranium One USA, Inc.
907 North Poplar Street
Suite 260
Casper, WY 82601

Origin ID: CPRA

FedEx Express

J122012071603251

Ship Date: 04OCT12
ActWgt: 1.0 LB
CAD: 1044753/INET3300

Delivery Address Bar Code

SHIP TO: (301) 415-7295 BILL SENDER
Keith McConnell, Deputy Director
U.S. Nuclear Regulatory Commission
11545 ROCKVILLE PIKE

ROCKVILLE, MD 20852 E2B2

Ref #
Invoice #
PO #
Dept #

FRI - 05 OCT A1
PRIORITY OVERNIGHT

TRK# 0201 7991 1980 5948

XC NSFA

20852
MD-US
IAD

515G1/9CCB/AA44

The World On Time.

Envelope

RI 649 1 C
FZ 647 5948 10.05

Align bottom of **Peel and Stick Airbill** or **Pouch** here.