COMPARISON OF ISL PREGNANT LIXIVIANT CHEMISTRY WITH DRINKING WATER STANDARDS AND NATIVE GROUNDWATER QUALITY
Selected pilot, operating and proposed ISL projects, New Mexico and Nebraska

		USEPA Stds.		HRI Crownpoint Project (NUREG-1508)								Teton Pilot 1980[d]			NUREG-1910, Table 2.4-1
		Max. Contaminant Levels		Baseline Water Quality		HRI Pregnant Lixiviant[b]			Mobil Sec, 9 Pilot ISL[c]			Baseline Quality	Pregnant Livixiant	*PL:baseline*	Ranges of Pregnant Lixiviant[e]
Parameter	Units	Primary	Secondary	NTUA-1[a]	NTUA-2[a]	Min	Max	*PL:baseline*	Baseline	Preg. Lix.	*PL:baseline*				
Arsenic	mg/l	0.01							0.004	0.054	*13.5*	0.017	0.83	*48.8*	
Barium	mg/l	2							0.1	0.1	1.0	0.16	0.44	*2.8*	
Bicarbonate	mg/l			234	221	800	1,500	*6.4*	228	1,005	*4.4*	277	798	*2.9*	≤400-5,000
Boron	mg/l								0.1	0.2	*2.0*	0.04	0.2	*5.0*	
Cadmium	mg/l	0.005							0.006	0.01	*1.7*	<0.01	<0.01	1.0	
Calcium	mg/l			5	1.3	100	350	*70.0*	5.8	320	*55.2*	0.6	9.4	*15.7*	≤20-500
Carbonate	mg/l			17	20	0	500	*29.4*				41	73	*1.8*	≤0.5-2,500
Chloride	mg/l		250	7.7	3	250	1,800	*233.8*	20.3	1,800	*88.7*	27	26	1.0	≤200-5,000
Chromium	mg/l	0.1							0.007	0.02	*2.9*	<.05	<.05	1.0	
Conductivity	µmhos/cm			625	529	2,500	7,500	*12.0*				630	1,281	*2.0*	
Copper	mg/l	1.3							0.01	0.04	*4.0*	<.05	<.05	1.0	
Fluoride	mg/l	4	2	1.1	0.32	25	50	*45.5*	0.39	0.3	0.8	0.35	0.37	*1.1*	
Iron	mg/l		0.3						0.67	0.02	0.0	10.9	6.5	0.6	
Lead	mg/l	0.015							0.003	0.005	*1.7*	<0.05	<.05	1.0	
Magnesium	mg/l			2	0.08	10	50	*25.0*				0	2.7	*unquantified*	≤3-100
Manganese	mg/l		0.05						0.05	5.85	*117.0*	0.08	0.1	*1.3*	
Mercury	mg/l	0.002							0.00024	0	0.0	<0.001	<0.001	1.0	
Molybdenum	mg/l								0.172	62	*360.5*	<0.05	<0.05	1.0	
Nickel	mg/l								0.02	0.09	*4.5*	<0.05	<0.05	1.0	
Nitrate	mg/l	10		0.01	0.02	≤0.01	0.2	*20.0*	0.09	0.17	*1.9*	0.74	0.3	0.4	
pH	mg/l		6.5-8.5	8.79	8.91	7	9	1.0				9.2	8.9	1.0	≤6.5-11
Potassium	mg/l			4.9	1.2	25	250	*51.0*				2.5	3.8	*1.5*	≤15-300
Radium-226	pCi/l	5		0.6	0.3		1,000	*1666.7*	<14.1	150		3.9	132.9	*34.1*	
Selenium	mg/l	0.05							0.01	4.6	*460.0*	<0.005	4.15	*>830*	
Sodium	mg/l			131	121	500	1,600	*12.2*	114	1,600	*14.0*	134	300	*2.2*	≤400-6,000
Sulfate	mg/l		250	82	52	100	1,200	*14.6*	38	1,176	*30.9*	37	43	*1.2*	≤400-5,000
Total Dissolved Solids	mg/l		500	402	351	1,500	5,000	*12.4*	357	5,500	*15.4*	442	976	*2.2*	≤1,650-12,000
Uranium	mg/l	0.03		<0.001	<0.001	50	250	*250000.0*	0.01	145	*14500.0*	0.12	84	*700.0*	≤0.01-500
Vanadium	mg/l			<0.01	<0.01							<0.05	0.24	*>4.8*	≤0.01-100
Zinc	mg/l		5						0.01	0.39	*39.0*	0.06	0.09	*1.5*	

NUREG-1508, USNRC, Final Environmental Impact Statement for HRI Crownpoint Uranium Project, February 1997.
NUREG-1910, USNRC, Generic Environmental Impact Statement for In-Situ Leach Uranium Milling Facilities, July 2008.
PL:baseline = ratio of pregnant lixiviant concentration to baseline or background water quality; values in italics represent ratios >1.0.
[a] NTUA-1 and NTUA-2 are municipal water supply wells in the town of Crownpoint, completed in same aquifer as proposed ISL well fields.
[b] Projected pregnant lixiviant estimated for HRI Crownpoint Project, 1997; NUREG-1508, Table 2.1
[c] Pregnant lixiviant in Mobil Section 9 Pilot ISL Project, Crownpoint, NM, 1980; NUREG-1508, Table 4.13.
[d] Data for Teton Pilot ISL Project near Church Rock, N.M (1980) attached to letter from M. Pelizza to J. Grimm, Nov. 29, 1993: NRC Docket No. 40-8968, ACN9402240123.
[e] Pregnant lixiviant for Crow Butte Resources, Crow Butte Project, Nebraska, 1998.

Prepared by Chris Shuey 9/22/09