



# U. S. ENERGY / CRESTED CORP.

877 North 8th West

(307) 856-9271

Riverton, Wyoming 82501

40-8971

RETURN ORIGINAL TO PDR, HQ.

X60549

November 16, 1993

Mr. Ramon E. Hall, Director  
Uranium Recovery Field Office  
U.S. Nuclear Regulatory Commission  
P. O. Box 25325  
Denver, CO 80225

DOCKETED  
NOV 22 1993  
USNRC  
MAIL SECTION  
DOCKET CLERK

93 NOV 18 1993

URFO  
RECEIVED

RE: Docket No. 40-8971  
License No. SUA-1524  
Green Mountain Ion Exchange Decommissioning Plan

Dear Mr. Hall:

Enclosed is the TCLP analysis to be inserted into Appendix 24 of the above referenced Green Mountain Ion Exchange Decommissioning Plan dated September 1993 and submitted to you on September 29, 1993. These results are for the Primary Settling Pond and the Secondary (Final) Settling Pond. As expected, all results obtained were below the regulatory limits for regulated Hazardous substances.

Please contact me if you have any questions.

Sincerely,

*Kenneth Webber*  
Kenneth Webber,  
Environmental Coordinator

KW:gd

enclosure

cc: George Worman, Kennecott Uranium Company  
GMX/NRC11-16-93

DESIGNATED ORIGINAL

10-118

DF02

Add Info

94-0085

Call to Mary C. Hood

9402230335 931116  
PDR ADOCK 04008971  
C PDR

FAX (307) 857-3050



ENERGY LABORATORIES, INC.

P.O. BOX 3258 \* CASPER, WY 82602 \* PHONE (307) 235-0515  
254 NORTH CENTER, SUITE 100 \* CASPER, WY 82601 \* FAX (307) 234-1639

LABORATORY REPORT- TOXICITY CHARACTERISTIC LEACHING PROCEDURE

Client: US Energy  
Sample ID: Primary Settling  
ELI #: 93-28672

Sample Date: 07-12-93  
Report Date: 09-29-93

METALS

	CAS #	Regulatory Limit, mg/l	Min. Report Limit, mg/l	Result, mg/l in Extract
Extraction Date:	07-19-93			
Arsenic	7440-38-2	5.0	0.50	<0.50
Barium	7440-39-3	100.0	10.0	<10.0
Cadmium	7440-43-9	1.0	0.10	<0.10
Chromium	7440-47-3	5.0	0.50	<0.50
Lead	7439-92-1	5.0	0.50	<0.50
Mercury	7439-97-6	0.20	0.02	<0.02
Selenium	7482-49-2	1.0	0.10	<0.10
Silver	7440-22-4	5.0	0.50	<0.50

REPORT APPROVED BY: *R.A. Harting*

t1d 28672tcp.uue



ENERGY LABORATORIES, INC.

P.O. BOX 3258 • CASPER WY 82602 • PHONE (307) 235-0515  
254 NORTH CENTER, SUITE 100 • CASPER, WY 82601 • FAX (307) 234-1639

LABORATORY REPORT- TOXICITY CHARACTERISTIC LEACHING PROCEDURE

Client: US Energy

Sample Date: 07-12-93

Sample ID: Primary Settling

Report Date: 09-29-93

ELI #: 93-28672

VOLATILE ORGANICS from ZERO HEAD SPACE EXTRACTION

	CAS #	Regulatory Limit, mg/l	Min. Report Limit, mg/l	Result, mg/l in Extract
Extraction Date:	07-17-93			
Benzene	71-43-2	0.50	0.010	<0.010
Carbon Tetrachloride	56-23-5	0.50	0.010	<0.010
Chlorobenzene	108-90-7	100.0	0.010	<0.010
Chloroform	67-66-3	6.0	0.010	<0.010
1,4-Dichlorobenzene	106-46-7	7.5	0.010	<0.010
1,2-Dichloroethane	107-06-2	0.50	0.010	<0.010
1,1-Dichloroethene	75-35-4	0.70	0.010	<0.010
Methyl Ethyl Ketone	78-93-3	200.0	0.250	<0.250
Tetrachloroethene	127-18-4	0.70	0.010	<0.010
Trichloroethene	79-01-6	0.50	0.010	<0.010
Vinyl Chloride	75-01-4	0.20	0.010	<0.010

\* Method 1311 Mathematics Performed as Necessary

REPORT APPROVED BY: *S.A. Harding*

t1d 28672org.usa



ENERGY LABORATORIES, INC.

P.O. BOX 3258 \* CASPER, WY 82602 \* PHONE (307) 235-0515
254 NORTH CENTER, SUITE 100 \* CASPER, WY 82601 \* FAX (307) 234-1639

LABORATORY REPORT- TOXICITY CHARACTERISTIC LEACHING PROCEDURE

Client: U.S. Energy Sample Date: 07-12-93
Sample ID: Primary Settling Report Date: 09-29-93
ELI #: 93-28672 Date Analyzed: 07-29-93

BASE NEUTRAL ORGANICS

Table with 4 columns: Compound Name, CAS #, Min. Report Limit, ug/l, and Result, ug/l in Extract. Lists various organic compounds like 1,4-Dichlorobenzene, Hexachloroethane, Nitrobenzene, etc.

REPORT APPROVED BY: [Signature]

c1d 28672827.usa



ENERGY LABORATORIES, INC.

P.O. BOX 3258 \* CASPER, WY 82602 \* PHONE (307) 235-0515
254 NORTH CENTER, SUITE 100 \* CASPER, WY 82601 \* FAX (307) 234-1639

LABORATORY REPORT- TOXICITY CHARACTERISTIC LEACHING PROCEDURE

Client: US Energy
Sample ID: Secondary Settling
ELI #: 93-28671

Sample Date: 07-12-93
Report Date: 09-29-93

METALS

Table with 5 columns: Element, CAS #, Regulatory Limit, mg/l, Min. Report Limit, mg/l, Result, mg/l in Extract. Rows include Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, and Silver.

REPORT APPROVED BY: [Signature]

tld 28671tcp.usa



ENERGY LABORATORIES, INC.

P.O. BOX 3258 • CASPER, WY 82602 • PHONE (307) 235-0515  
254 NORTH CENTER, SUITE 100 • CASPER, WY 82601 • FAX (307) 234-1639

LABORATORY REPORT- TOXICITY CHARACTERISTIC LEACHING PROCEDURE

Client: US Energy

Sample Date: 07-12-93

Sample ID: Secondary Settling

Report Date: 09-29-97

ELI #: 93-28671

VOLATILE ORGANICS from ZERO HEAD SPACE EXTRACTION

	CAS #	Regulatory Limit, mg/l	Min. Report Limit, mg/l	Result, mg/l in Extract
Extraction Date:	07-17-93			
Benzene	71-43-2	0.50	0.010	<0.010
Carbon Tetrachloride	56-23-5	0.50	0.010	<0.010
Chlorobenzene	108-90-7	100.0	0.010	<0.010
Chloroform	67-66-3	6.0	0.010	<0.010
1,4-Dichlorobenzene	106-46-7	7.5	0.010	<0.010
1,2-Dichloroethane	107-06-2	0.50	0.010	<0.010
1,1-Dichloroethene	75-35-4	0.70	0.010	<0.010
Methyl Ethyl Ketone	78-93-3	200.0	0.250	<0.250
Tetrachloroethene	127-18-4	0.70	0.010	<0.010
Trichloroethene	79-01-6	0.50	0.010	<0.010
Vinyl Chloride	75-01-4	0.20	0.010	<0.010

\* Method 1311 Mathematics Performed as Necessary

REPORT APPROVED BY: *R.A. Leach*

tld 28671org.us



ENERGY LABORATORIES, INC.

P.O. BOX 3258 • CASPER, WY 82602 • PHONE (307) 235-0515
254 NORTH CENTER, SUITE 100 • CASPER, WY 82601 • FAX (307) 234-1639

LABORATORY REPORT- TOXICITY CHARACTERISTIC LEACHING PROCEDURE

Client: U.S. Energy Sample Date: 07-12-93
Sample ID: Secondary Settling Report Date: 09-29-93
ELI #: 93-28671 Date Analyzed: 07-29-93

BASE NEUTRAL ORGANICS

Table with columns: CAS #, Min. Report Limit, ug/l, Result, ug/l in Extract. Includes rows for 1,4-Dichlorobenzene, Hexachloroethane, Nitrobenzene, Hexachlorobutadiene, Pyridine, 2,4-Dinitrotoluene, Hexachlorobenzene, o-Cresol, m,p-Cresol, 2,4,6-Trichlorophenol, and Pentachlorophenol.

REPORT APPROVED BY: S.A. Leal

tld 28671827.usa



ENERGY LABORATORIES, INC.

P.O. BOX 3258 • CASPER, WY 82602 • PHONE (307) 235-0515
254 NORTH CENTER, SUITE 100 • CASPER, WY 82601 • FAX (307) 234-1639

LABORATORY REPORT- TOXICITY CHARACTERISTIC LEACHING PROCEDURE

Client: U.S. Energy Sample Date: 07-12-93
Sample ID: Method Blank Report Date: 09-29-93
ELI #: Date Analyzed: 07-29-93

BASE NEUTRAL ORGANICS

Table with 4 columns: Compound Name, CAS #, Min. Report Limit, pg/l, Result, pg/l in Extract. Includes compounds like 1,4-Dichlorobenzene, Hexachloroethane, Nitrobenzene, etc.

REPORT APPROVED BY: R.A. Leach

t1d 28672b1k.uoe





ENERGY LABORATORIES, INC.

P.O. BOX 3258 \* CASPER, WY 82602 \* PHONE (307) 235-0515
254 NORTH CENTER, SUITE 100 \* CASPER, WY 82601 \* FAX (307) 234-1639

SOILS ANALYSIS REPORT - US ENERGY

Project: SWEETWATER

Table with 4 columns: Sample I.D., Secondary Settling, Primary Settling, and Det.Limit. Rows include Sample Date, Report Date, and Sample Number.

RADIOMETRIC pCi/g:

Table with 4 columns: Isotope Name, Secondary Settling, Primary Settling, and Det.Limit. Rows include U, Ra226, Ra228, Pb210, Po210, Gross Alpha, Gross Beta, and Th230.

REPORT APPROVED BY: A.D. Leasing

t1d a328671.usa



QUALITY ASSURANCE REPORT - Us Energy  
 Report Date: 10-04-93  
 Project: Sweetwater  
 ELI #(s): 28671-72

TRACE METALS mg/L:	METHOD	Dup #1 %	Dup #2 %	Spk #1 %	Spk #2 %	ANALYST	DATE SAMPLE ANALYZED
Arsenic	EPA-206.3	100	-	100	-	CP	08-02-93
Barium	EPA-200.7	100	-	100	-	TS	07-21-93
Cadmium	EPA-200.7	100	-	99	-	TS	07-21-93
Chromium	EPA-200.7	100	-	100	-	TS	07-21-93
Lead	EPA-239.2	100	-	98	-	TS	07-21-93
Mercury	EPA-245.2	100	-	100	-	CP	08-02-93
Selenium	EPA-270.3	100	-	104	-	CP	07-30-93
Silver	EPA-200.7	100	-	87	-	TS	07-21-93

RADIOMETRIC:

Uranium	EPA-908.1	99	-	-	-	DB	07-28-93
Ra226	EPA-903.0	100	-	101	-	DB	07-30-93
Ra228	EPA-904.0	100	-	-	-	DB	08-06-93
Lead 210	NERHL-65-4	100	-	85	-	DB	08-02-93
Gross Alpha	EPA-900.0	101	-	-	-	DB	07-23-93
Gross Beta	EPA-900.0	-	-	106	-	DB	07-23-93
Polonium 210	RM03008						
	USAEC 1970.	116	-	-	-	DB	08-07-93

USEPA-ESML-LV INTERCOMPARISON STUDY RESULTS

Radiometric	Method	ELI Value	Standard	Difference	Analyst	Date
Uranium	EPA-908.1	14.59	17.07	-2.48	DB	02-12-93
Ra226	EPA-903.1	12.88	12.54	0.34	DB	03-05-93
Ra228	EPA-904.1	14.55	13.73	0.82	DB	03-05-93
Gross Alpha	EPA-900.0	20.53	31.5	-10.97	DB	01-29-93
Gross Beta	EPA-900.0	46.33	60.7	-14.37	DB	01-29-93

VOLATILE ORGANICS FROM ZERO HEAD SPACE EXTRACTION

	Spike Conc, mg/L:	Spike % Recovery	Spike % Recovery	Spike % Recovery	Spike % Recovery	QC LIMITS	ANALYST
ELI Sample Number:		93.28671	93.28672	-	-		
Extraction Date:		07-12-93	07-12-93	-	-		
Analysis Date:		07-22-93	07-22-93	-	-		
Benzene	0.050	102	100	-	-	±30%	SEC
Carbon Tetrachloride	0.050	89	104	-	-	±30%	SEC
Chlorobenzene	0.050	109	103	-	-	±30%	SEC
Chloroform	0.050	122	114	-	-	±30%	SEC
1,4-Dichlorobenzene	0.050	95	96	-	-	±30%	SEC
1,2-Dichloroethane	0.050	102	92	-	-	±30%	SEC
1,1-Dichloroethene	0.050	103	103	-	-	±30%	SEC
Methyl Ethyl Ketone	0.550	106	81	-	-	±30%	SEC
Tetrachloroethene	0.050	119	117	-	-	±30%	SEC
Trichloroethene	0.050	102	103	-	-	±30%	SEC
Vinyl Chloride	0.050	81	82	-	-	±30%	SEC

SURROGATE RECOVERY:

1,2-Dichloroethane-d4	81	118	-	-	±20%	SEC
Toluene-d8	80	87	-	-	±20%	SEC
Bromofluorobenzene	98	101	-	-	±20%	SEC

Report Approved By: