NL INDUSTRIES OVERSIGHT
GROUNDWATER ANALYSES
PHASE II AUGUST, 1989

EBAS=Ebasco Services Inc.
OBG=Obrien & Gere Engineers

LOCATIONS:	EBAS NL-GW-II-1R (OBG WELL 1R)	OBG (OBG WELL 1R)	EBAS NL-GW-II-12 (OBG WELL 12)	OBG (OBG WELL 12)	EBAS NL-GW-II-KS (OBG WELL KS)	OBG (OBG WELL KS)
Well Depth/Aquifer:	32.0'/WATER TABLE		78.2'/1ST CONF AQ		17.8'/WATER TABLE	
INORGANICS (mg/L)						
Sulfate	2500	2300	<5	<1	1600	1300
RADIONUCLIDES (pCi/L)						
Lead 210	NA	NA	NA	NA	<2 NV	<5
Radium 226	↓	↓	↓	↓	<0.1 NV	<1
Radium 228	↓	↓	↓	↓	<2 NV	1.7+/-0.5
Thorium 232	↓	↓	↓	↓	<0.1 NV	<0.3
Thorium 230	↓	↓	↓	↓	<0.2 NV	28.0+/-3.0
Thorium 228	↓	↓	↓	↓	1.5 +/- 0.2 NV	<6
Uranium 238	↓	↓	↓	↓	1.8 +/- 0.2 NV	1.1+/-0.2
Uranium 235	↓	↓	↓	↓	<0.1 NV	<0.1
Uranium 234	↓	↓	↓	↓	2.1 +/- 0.2 NV	1.3+/-0.2
Potassium 40	↓	↓	↓	↓	<100 NV	<60
Cesium 137	↓	↓	↓	↓	<6 NV	<3
Gross Alpha	↓	↓	↓	↓	21	<20.0
TRACE METALS: (ug/L)						
Arsenic	NA	NA	NA	NA	4.7 BJ	NA
Cadmium	3.00 B	3	1.40 U	<1	99.8 J	79
Calcium	NA	NA	NA	NA	78200 J	NA
Chromium	NA	NA	NA	NA	16.2 J	16
Copper	NA	NA	NA	NA	133 J	92
LEAD	14.60 J	<5	1.50 U	<1	2130 J	2350
Nickel	NA	NA	NA	NA	261 J	NA
Silver	NA	NA	NA	NA	1.6 UJ	NA
Zinc	NA	NA	NA	NA	2740 J	NA

54381

NL INDUSTRIES OVERSIGHT
GROUNDWATER ANALYSES
PHASE II AUGUST, 1989

	EBAS NL-GW-II-SD (OBG WELL SD)	OBG (OBG WELL SD)	EBAS NL-GW-II-CR2 (OBG WELL CR2)	OBG (OBG WELL CR2)	EBAS NL-RW-II-PW3 (RESIDENTIAL WELL 3)	OBG PW3
Well Depth/Aquifer:	29.0'/WATER TABLE		33.5'/WATER TABLE		UNKNOWN/WATER TABLE	
INORGANICS (mg/L)						
Sulfate	27000	24000	<10	<3	NA	NA
RADIONUCLIDES: (pCi/L)						
Gross Alpha	524.2	570.0+/-180	NA	NA	NA	NA
Gross Beta	228.0	580.0+/-170.0	NA	NA	NA	NA
TRACE METALS: (ug/L)						
Arsenic	190 J	NA				
Cadmium	906 J	963	1.40 U	<1	NA	<1
Calcium	281000 J	NA	NA	NA	NA	NA
Chromium	3730 J	4340	NA	NA	NA	NA
Copper	4220 J	4680	NA	NA	NA	NA
LEAD	95.7 J	8	1.50 U	6	1.60 BJ	1
Nickel	2290 J	2480	NA	NA	NA	NA
Silver	1.6 UJ	37	NA	NA	NA	NA
Thallium	8570 J	NA	NA	NA	NA	NA
Zinc	8570 J	9690	NA	NA	NA	NA

NL INDUSTRIES OVERSIGHT
GROUNDWATER ANALYSES
PHASE II OCTOBER, 1989

	EBAS NL-GW-II-13 (OBG WELL 13)	OBG (OBG WELL 13)	EBAS NL-GW-II-17 (OBG WELL 17)	OBG (OBG WELL 17)	EBAS NL-GW-II-18 (OBG WELL 18)	OBG
Well Depth/Aquifer	110'/1ST CONF AQ		21.0'/WATER TABLE		54.0'/WATER TABLE	
INORGANICS (mg/L)						
Sulfate	5.0	3	14.0	13	NA	NA
Chloride	3.8	NA	2.5	NA	NA	NA
VOLATILE ORGANICS (ug/L)						
Benzene	NA	NA	NA	NA	1.1J	NA
Trichloroethene					0.2J	NA
Isopropylbenzene					0.1J	NA
Carbon Disulfide					0.1J	NA
1,1,2-Trichloro-1,2,2-ethene					1.4R	NA
RADIONUCLIDES (pCi/L)						
Gross Alpha	<3.0 U	<1.0	11 J	1.0+/-0.4	NA	NA
Gross Beta	4.0 U	1.3+/-0.2	16.7 J	2.1+/-0.4	NA	NA
TRACE METALS: (ug/L)						
Arsenic	2.0 U	<1	3.2 B	6	NA	NA
Cadmium	4.0 NJ	<1	5.4 NJ	<1		
Chromium	3.0 U	3	19.6 J	46		
Copper	6.0 U	NA	33.5 J	NA		
LEAD	7.3 J	8	2.9 BN	8		
Nickel	25.0 U	NA	NA	NA		
Selenium	NA	NA	2.0 UJ	NA		
Silver	3.0 U	NA	NA	NA		
Zinc	13.6 B	NA	29.3	NA		
Antimony	26	NA	26.0 U	NA		
Tin	NA	NA	50.0 U	NA		

NL INDUSTRIES OVERSIGHT
SURFACE WATER ANALYSES
PHASE II OCTOBER, 1989

EBAS=Ebasco Services Inc.
OBG=Obrien & Gere Engineers

	Locations							
	EBAS	OBG	EBAS	OBG	EBAS	OBG	EBAS	OBG
INORGANICS	NLI-SW-ES1-II	#ES1	NLI-SW-WS8-II	#WS8	NLI-SW-WS9-II	#WS9	NLI-SW-WS12-II	#WS12
(mg/L)	(EAST STREAM)		(WEST STREAM)		(WEST STREAM)		(WEST STREAM)	
Sulfate	570.0 J	600	800.0	740	510.0	460	7.0	9
Chloride	240.0	230	42.0	38	44.0	34	12.9	12
Trace Metals (ug/L)								
Antimony	NA	NA	NA	NA	142.48	79	NA	NA
Arsenic					50.2	60		
Cadmium					16.5 NJ	14		
Chromium					7.4 BJ	16		
Copper					40.4 J	39		
LEAD	1.0 UN	10	366	414	1080 J	1270	5930	2200
Nickel	NA	NA	NA	NA	25.0 U	NA	NA	NA
Selenium					NA	<10		
Silver					3.0 U	NA		
Zinc					150	162		
Tin					NA	<800		

NL INDUSTRIES OVERSIGHT
SEDIMENT ANALYSES
PHASE II

October, 1989

EBAS=Ebasco Services Inc.
OBG=Obrien & Gere Engineers

	LOCATIONS:					
	EBAS NLI-SD-ES1-1 (0-3 in)	OBG	EBAS NLI-SD-ES1-2 (3-6 in)	OBG	EBAS NLI-SD-ES1-3 (6-8 in)	OBG
LEAD (mg/kg)	17.4 NJ	13.9	19.2 NJ	21.8	23.5 NJ	28.2
	LOCATIONS:					
	EBAS NLI-SD-WS1-1 (0-3 in)	OBG	EBAS NLI-SD-WS1-2 (3-6 in)	OBG	EBAS NLI-SD-WS1-3 (6-12 in)	OBG
LEAD (mg/kg)	1460 J	1350	704 J	551	182 J	225
	LOCATIONS:					
	EBAS NLI-SD-WS8-1 (0-3 in)	OBG	EBAS NLI-SD-WS8-2 (3-6 in)	OBG	EBAS NLI-SD-WS8-3 (6-9 in)	OBG
LEAD (mg/kg)	1430 J	1310	781	490	8.4 NJ	19.6
	LOCATIONS:					
	EBAS NLI-SD-WS12-1 (0-3 in)	OBG	EBAS NLI-SD-WS12-2 (3-6 in)	OBG	EBAS NLI-SD-WS12-3 (6-10 in)	OBG
LEAD (mg/kg)	2470 J	1860	753	589	315	140
	LOCATIONS:					
	EBAS NLI-SD-WS9-1 (0-3 in)	OBG	EBAS NLI-SD-WS9-2 (3-6 in)	OBG	EBAS NLI-SD-WS9-3 (6-9 in)	OBG
LEAD (mg/kg)	4800 J	6403.9	1310 J	899.1	36.6 NJ	28.9
TRACE METALS (mg/kg)						
Antimony	262 J	477.8				
Arsenic	280 J	280.3				
Cadmium	17.5 J	21.2				
Chromium	40.7 J	49.3				
Copper	195 J	187.2				
Nickel	54.0 J	NA				
Selenium	3.1 BJ	2.7				
Tin	43.1 J	<394.1				
Zinc	228 J	280.8				

NL INDUSTRIES OVERSIGHT
SURFACE SOIL ANALYSES
PHASE II

AUGUST, 1989

EBAS=Ebasco Services Inc.
OBG=Obrien & Gere Engineers

	LOCATIONS:			
	EBAS	OBG	EBAS	OBG
INORGANICS (mg/kg)	NLI-SO-213-18 (18-24 in)		NLI-SO-217-18 (18-24 in)	
LEAD	305 J	891	207 J	231
Trace Metals:				
Antimony	NA	NA	6.8 U	0.6
Arsenic	NA	NA	3.9	2.78
Selenium	NA	NA	68 U	<0.1

NL INDUSTRIES OVERSIGHT
LEACHATE RESULTS AUGUST, 1989

BAS=Ebasco Services, Inc.
BG=O'Brien & Gere Engineers

	LOCATIONS:			
	EBAS	OBG	EBAS	OBG
	NLI-LE-A-01		NLI-LE-B-01	
	8-15-89		8-15-89	
RGANICS (mg/L)				
Total Organic Carbon	NA	3,400,000	NA	NA
Total Organic Halogens	NA	<2000	NA	NA
olatile Organics (ug/L)				
Trichloroethene	NA	NA	0.47 J	NA
xtractables (ug/L)	NA	NA	ND	NA
RADIONUCLIDES (pCi/L)				
Gross Alpha	3720 J	<2000	83	<70
Gross Beta	179 R	<4000	63 J	<100
TRACE METALS (ug/L)				
Aluminum	45100	82500	38 U	<20
Antimony	157000	82700	65.1 J	108
Arsenic	76500	218000	1420	972
Barium	2790 N	492	39.6 R	30
Beryllium	20 U	18	2.0 U	<1
Cadmium	30 U	<20	5.4	<2
Calcium	28900 B	61300	315000	274000
Chromium	241	3470	7.0 U	11
Cobalt	90 U	151	9.0 U	6
Copper	212 B	154	19.3 B	<5
Iron	17300 R	271000	89700	57200
Lead	10 U	<10	260	254
Magnesium	480 U	12400	109000	96900
Manganese	62.4 B	5570	9840	8620
Mercury	20 UJ	<2	0.20 UJ	<2
Nickel	1360	795	70.2	40
Potassium	188000	87900	28800	26500
Selenium	252 R	70	27.4 R	<10
Silver	70 U	102	7.0 U	<2
Sodium	110000000	34000000	3320000	3330000
Thallium	20 UR	<50	2.0 UR	<5
Vanadium	76600	40400	20.9 B	16
Zinc	314	752	26.4	12
Cyanide	10 U	<10	10.0 U	<10

NLI 001 1319

NL INDUSTRIES OVERSIGHT
QUALITY ASSURANCE BLANKS
PHASE II AUGUST, OCTOBER, 1989

EBAS=Ebasco Services Inc.
OBG=Obrien & Gere Engineers

	EBAS NLI-FB-LE (LEACHATE TUBING) 8-16-89	EBAS NLI-FB-8-15 (GROUNDWATER) 8-15-89	EBAS NLI-FB-8-16 (GROUNDWATER) 8-16-89	EBAS NLI-FB-8-17 (GROUNDWATER) 8-17-89	EBAS NLI-FB-10-17 (GROUNDWATER) 10-17-89	EBAS NLI-FB-10-17 (SURFACE WATER) 10-17-89	EBAS NLI-FB-10-17 (SEDIMENT) 10-17-89
INORGANICS/ ORGANICS (mg/L)							
Sulfate	NA	<5	NA	NA	1.0	1.0	NA
Chloride	NA	NA			<0.5	NA	
Total Organic Carbon	NA	NA			NA		
Total Organic Halogens	NA	NA					
RADIONUCLIDES (pCi/L)							
Gross Alpha	1.0 U	NA					
Gross Beta	1.0 U						
TRACE METALS (ug/L)							
Aluminum	38.0 U						
Antimony	38.0 U						
Arsenic	3.5 B			1.6 UJ			
Barium	3.0 UR			NA			
Beryllium	2.0 U	1.40 U	1.40 U	NA			
Cadmium	3.0 U	NA	NA	1.8 UJ			
Calcium	95.4 B			28.5 B			
Chromium	7.0 U			2.8 UJ			
Cobalt	9.0 U			NA			
Copper	8.6 B			6.9 BJ			
Iron	23.1 B			NA			
LEAD	1.0 U	1.50 U	1.50 U	6.5 J	1.0 U	1.0 U	1.0 U
Magnesium	48.0 U	NA	NA	NA	NA	NA	NA
Manganese	2.0 U			NA			
Mercury	0.20 UJ			NA			
Nickel	10.0 U			11.4 BJ			
Potassium	497 B			NA			
Selenium	6.1 R			NA			
Silver	7.0 U			2.2 BJ			
Sodium	409 B			NA			
Thallium	2.0 U			NA			
Vanadium	10.0 U			NA			
Zinc	8.0 U			3.0 BJ			
Cyanide	10.0 U			NA			

NL INDUSTRIES OVERSIGHT
QUALITY ASSURANCE BLANKS (cont'd)
PHASE II AUGUST, OCTOBER, 1989

EBAS=Ebasco Services Inc.
OBG=Obrien & Gere Engineers

	EBAS NLI-DI-II-01 (DI WATER) 8-17-89	EBAS NLI-DI-II-02 (DI WATER) 8-17-89	EBAS NLI-DI-II-03 (DI WATER) 8-17-89	EBAS NLI-DI-II-04 (DI WATER) 8-17-89	EBAS NLI-DI-II-01 (DI WATER) 10-17-89	EBAS NLI-TB-II-01 (TRIP BLANK) 8-15-89	EBAS NLI-TB-II-02 (TRIP BLANK) 10-17-89
VOLATILE ORGANICS (ug/L)							
Trichlorofluoromethane	NA	NA	NA	NA	U	1.25	U
Chloroform				8.3		U	0.1 J
Toluene				NA			0.2 BJ
(P & M) - Xylene				NA			0.1 BJ
EXTRACTABLES (ug/ml)	U	NA	NA	U	NA	NA	NA
ORGANICS/INORGANICS (mg/L)							
Sulfate	<5	<5	<5	NA	<1.0		
Chloride	<2.0	<2.0	<2.0		<0.5		
Total Organic Carbon	NA	NA	NA				
Total Organic Halogens	NA	NA	NA				
RADIONUCLIDES (pCi/L)							
Gross Alpha	1.0 U	1.0 U	1.0 U		<3.0 U		
Gross Beta	1.0 U	1.0 U	1.0 U		<4.0 U		
TRACE METALS (ug/L)							
Arsenic	1.6 UJ	1.6 UJ	1.6 UJ		2.0 U		
Cadmium	1.8 UJ	1.8 UJ	1.8 UJ		4.0 NJ		
Calcium	27.3 B	22.6 B	13.1 B		NA		
Chromium	2.8 UJ	2.8 UJ	2.8 UJ		3.0 U		
Copper	2.1 BJ	1.1 UJ	2.1 BJ		6.0 U		
LEAD	2.3 BJ	0.4 UJ	1.8 BJ		2.5 BJ		
Nickel	13.3 BJ	9.7 UJ	19.0 BJ		25.0 U		
Silver	2.9 BJ	2.9 BJ	2.2 BJ		3.0 U		
Zinc	3.0 BJ	1.3 UJ	1.3 UJ		2.0 U		

DATA REPORTING QUALIFIERS:

U: INDICATES COMPOUND WAS ANALYZED FOR, BUT NOT DETECTED

NA: INDICATES ANALYTE WAS NOT TESTED FOR.

R: INDICATES VALUE WAS REJECTED. GENERALLY THE RESULT OF LAB OR FIELD BLANK CONTAMINATION.

J: INDICATES AN ESTIMATED VALUE.

B: INDICATES ANALYTE WAS FOUND IN THE BLANK AS WELL AS THE SAMPLE.

N: INDICATES SPIKE SAMPLE RECOVERY IS NOT WITHIN CONTROL LIMITS.

NV: INDICATES VALUE WAS NOT VALIDATED.