EPA 980005
809.02-7

D H E C

PROMOTE PROTECT PROSPER

2600 Bull Street
Columbia, SC 29201-1708

RECEIVED
OCT 26 1998
NL&OE

October 14, 1998

Gary J. Taylor
SCE&G
V.C. Summer Nuclear Station
PO Box 88
Jenkinsville, SC 29065

RE: Request for One-time Land Application of Water Plant Sludge
V.C. Summer Nuclear Station
Fairfield County

Dear Mr. Taylor:

This office has completed a review of your request to dispose of water treatment sludge from the Alum Sludge Lagoon associated with NPDES Permit #SC0030856. Based on the information provided, this office hereby approves your request.

The Alum Sludge Lagoon may be drained and the flow diverted to Outfall 008. Disposal of approximately 1000 cubic yards of sludge shall be performed as outlined in your August 28, 1998 letter. Please note that disposal of this sludge applies to this disposal event only; any subsequent sludge disposal activities must have prior approval from this Office.

Should you have any questions or comments, please contact me at 803-734-0819.

Sincerely,

Melinda G. Vickers

Melinda G. Vickers
Environmental Engineer Associate
Industrial, Agricultural and Storm Water Permitting Division

mgv

cc: Central Midlands EQC

SCE&G
A SCANA COMPANY

South Carolina Electric & Gas Company
Virgil C. Summer Nuclear Station
P.O. Box 88
Jenkinsville, SC 29065
(803) 345-4344
(803) 345-5209

Gary J. Taylor
Vice President
Nuclear Operations

August 28, 1998
RC-98-0136

Mr. William C. Botts
Environmental Engineering Associate
Industrial and Agricultural Wastewater Division
Bureau of Water
South Carolina Department of Health
and Environmental Control
2600 Bull Street
Columbia, SC 29201

Dear Mr. Botts:

Subject: VIRGIL C. SUMMER NUCLEAR STATION
NPDES PERMIT NO. SC0030856
APPROVAL TO DISPOSE OF SLUDGE (EPA 980005)

South Carolina Electric & Gas Company (SCE&G) requests approval to dispose of water treatment sludge from the Alum Sludge Lagoon, Outfall 006A, NPDES Permit No. SC0030856. The sludge from Outfall 006A consists of clarifier blowdown waste (floc), gravity filter backwash residue (dirt and carbon fines), activated carbon filter backwash residue (dirt and carbon fines), and wastes from the feeders supplying the clarifier (clay and Betz polymer 1190). No radioactivity has been measured in the sludge above environmental levels. This outfall does not contain any alum sludge since alum has not been added to the clarifier since 1987 and the outfall was desludged in 1994. Disposal would take place on SCE&G property in the vicinity of the Virgil C. Summer Nuclear Station (VCSNS).

The disposal of the sludge will be as follows:

1. Divert the flow from Outfall 006A to Outfall 008 per design. The effluent limitations are more stringent at Outfall 008 than 006A.

2. Allow the sludge to dry for approximately two to three weeks.

3. A large backhoe will then be used to remove the sludge. The sludge will then be placed into a dump truck or an equivalent type vehicle.

4. The dump truck will haul and dump the sludge at the area previously utilized in the sludge disposal of 1994.

5. The sludge will then be allowed to drain. After several weeks of drainage the sludge will be leveled across the basin and plowed into the ground inside the holding basin if necessary.

Attached for your review are the TCLP and gamma isotopic analyses results for the sludge. A layout map of the sludge disposal area and a topographical map of the entire facility with the location of the disposal site indicated are also enclosed for your review.

Should you need any further information during the review of this request, please contact Ms. Susan B. Reese at 345-4591.

Very truly yours,

Gary J. Taylor

SBR/GJT/sr
Attachment

c: W. F. Bacon (331)
S. E. Summer (P05)
L. A. Blue (307)
RTS (EPA 980005)
File (809.02-7)
DMS (RC-98-0136)

Proposed
Disposal
Site

STATION

SOUTH CAROLINA ELECTRIC & GAS COMPANY

VIRGIL C. SUMMER NUCLEAR STATION

V C SUMMER NUCLEAR STATION

SLUDGE APPLICATION SITE

1"=200'

SCE&G
A SCANA COMPANY

DESIGN ENGINEERING

V. C. SUMMER NUCLEAR STATION JENKINSVILLE, S. C.

MADE	CHECKED	LE APPROVAL
1.	2.	3.

SCALE			
NO SCALE			
	DRAWING NUMBER	SHT. NUMBER	REV

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: South Carolina Electric & Gas
Mail Code 331
P.O. Box 88
Jenkensville, South Carolina 29065

Contact: Mr. Hascal Goff

cc: SCEG00397 Report Date: June 16, 1998

Sample ID	: 006-A-INLET
Lab ID	: 9806115-01
Matrix	: TCLP
Date Collected	: 06/01/98
Date Received	: 06/03/98
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	Units	Method	Analyst	Date	Time	Batch
Volatile Organics								
TCLP Volatile Compounds - 11 items								
1,1-Dichloroethylene	<	70.0	ug/l	EPA 8260	JEB	06/09/98	1759	123781
1,2-Dichloroethane	<	50.0	ug/l	EPA 8260				
1,4-Dichlorobenzene	<	750	ug/l	EPA 8260				
2-Butanone	<	2000	ug/l	EPA 8260				
Benzene	<	50.0	ug/l	EPA 8260				
Carbon Tetrachloride	<	20.0	ug/l	EPA 8260				
Chlorobenzene	<	1000	ug/l	EPA 8260				
Chloroform	<	600	ug/l	EPA 8260				
Tetrachloroethylene	<	70.0	ug/l	EPA 8260				
Trichloroethylene	<	50.0	ug/l	EPA 8260				
Vinyl chloride	<	20.0	ug/l	EPA 8260				
Extractable Organics								
TCLP Acid Compounds - 5 items								
2,4,5-Trichlorophenol	<	40.0	mg/l	EPA 8270	JPA	06/09/98	1435	123659
2,4,6-Trichlorophenol	<	0.200	mg/l	EPA 8270				
Pentachlorophenol	<	10.0	mg/l	EPA 8270				
m,p-Cresol	<	20.0	mg/l	EPA 8270				
o-Cresol	<	20.0	mg/l	EPA 8270				
TCLP Base/Neutral Compounds - 6 items								
2,4-Dinitrotoluene	<	0.100	mg/l	EPA 8270				
Hexachlorobenzene	<	0.100	mg/l	EPA 8270				
Hexachlorobutadiene	<	0.100	mg/l	EPA 8270				
Hexachloroethane	<	0.300	mg/l	EPA 8270				
Nitrobenzene	<	0.100	mg/l	EPA 8270				
Pyridine	<	0.500	mg/l	EPA 8270				
TCLP Herbicides - 2 items								
2,4,5-TP	<	1.00	mg/l	EPA 8151	JLS	06/12/98	0404	123660
2,4-D	<	1.00	mg/l	EPA 8151				
TCLP Pesticides - 8 items								

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: South Carolina Electric & Gas
Mail Code 331
P.O. Box 88
Jenkensville, South Carolina 29065
Contact: Mr. Hascal Goff

cc: SCEG00397 Report Date: June 16, 1998

Sample ID : 006-A-INLET

Parameter	Qualifier	Result	Units	Method	Analyst	Date	Time	Batch
Chlordane	<	0.0125	mg/l	EPA 8080	SJ	06/11/98	1404	123762
Endrin	<	0.00200	mg/l	EPA 8080	SJ	06/11/98	1404	123762
Heptachlor	<	0.00100	mg/l	EPA 8080				
Heptachlor & Hep. Epoxide	<	0.00200	mg/l	EPA 8080				
Heptachlor epoxide	<	0.00100	mg/l	EPA 8080				
Methoxychlor	<	1.00	mg/l	EPA 8080				
Toxaphene	<	0.0500	mg/l	EPA 8080				
gamma-BHC	<	0.0400	mg/l	EPA 8080				
Metals Analysis								
Mercury	<	0.0200	mg/l	EPA 7471	RMJ	06/09/98	0126	123744
Silver	<	25.0	ug/l	EPA 6010A	MBL	06/09/98	0916	123684
Arsenic	<	25.0	ug/l	EPA 6010A				
Barium		87.3	ug/l	EPA 6010A				
Cadmium	<	25.0	ug/l	EPA 6010A				
Chromium	<	25.0	ug/l	EPA 6010A				
Lead	<	25.0	ug/l	EPA 6010A				
Selenium	<	25.0	ug/l	EPA 6010A				

The following prep procedures were performed:

GC/MS Acid Compounds	EPA 3510	MAL	06/08/98	1530	123659
GC/MS Base/Neutral Compounds	EPA 3510	MAL	06/08/98	1530	123659
Herbicides	EPA 8150	HDB	06/08/98	1600	123660
Pesticides	EPA 3510	JPB	06/09/98	1000	123762
Mercury	EPA 7470	RMJ	06/08/98	2030	123744
TCLP Extraction - Semivolatiles	EPA 1311	JL	06/07/98	1615	123650
TCLP Extraction - Volatiles	EPA 1311	JL	06/08/98	1555	123651
TCLP Prep for Metals	EPA 1311	JL	06/07/98	1615	123649

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NC	233	
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Mail Code 331
P.O. Box 88
Jenkensville, South Carolina 29065

Contact: Mr. Hascal Goff

cc: SCEG00397 Report Date: June 16, 1998

Sample ID : 006-A-INLET

Parameter	Qualifier	Result	Units	Method	Analyst	Date	Time	Batch

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Tom Seabrook at (803) 556-8171.

Thomas M. Seabrook

Reviewed By

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: South Carolina Electric & Gas
Mail Code 331
P.O. Box 88
Jenkensville, South Carolina 29065
Contact: Mr. Hascal Goff

cc: SCEG00397 Report Date: June 16, 1998

Sample ID	: 006-A-OUTLET
Lab ID	: 9806115-03
Matrix	: TCLP
Date Collected	: 06/01/98
Date Received	: 06/03/98
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	Units	Method	Analyst	Date	Time	Batch
Volatile Organics								
TCLP Volatile Compounds - 11 items								
1,1-Dichloroethylene	<	70.0	ug/l	EPA 8260	JEB	06/09/98	1830	123781
1,2-Dichloroethane	<	50.0	ug/l	EPA 8260				
1,4-Dichlorobenzene	<	750	ug/l	EPA 8260				
2-Butanone	<	2000	ug/l	EPA 8260				
Benzene	<	50.0	ug/l	EPA 8260				
Carbon Tetrachloride	<	20.0	ug/l	EPA 8260				
Chlorobenzene	<	1000	ug/l	EPA 8260				
Chloroform	<	600	ug/l	EPA 8260				
Tetrachloroethylene	<	70.0	ug/l	EPA 8260				
Trichloroethylene	<	50.0	ug/l	EPA 8260				
Vinyl chloride	<	20.0	ug/l	EPA 8260				
Extractable Organics								
TCLP Acid Compounds - 5 items								
2,4,5-Trichlorophenol	<	40.0	mg/l	EPA 8270	JPA	06/09/98	1508	123659
2,4,6-Trichlorophenol	<	0.200	mg/l	EPA 8270				
Pentachlorophenol	<	10.0	mg/l	EPA 8270				
m,p-Cresol	<	20.0	mg/l	EPA 8270				
o-Cresol	<	20.0	mg/l	EPA 8270				
TCLP Base/Neutral Compounds - 6 items								
2,4-Dinitrotoluene	<	0.100	mg/l	EPA 8270				
Hexachlorobenzene	<	0.100	mg/l	EPA 8270				
Hexachlorobutadiene	<	0.100	mg/l	EPA 8270				
Hexachloroethane	<	0.300	mg/l	EPA 8270				
Nitrobenzene	<	0.100	mg/l	EPA 8270				
Pyridine	<	0.500	mg/l	EPA 8270				
TCLP Herbicides - 2 items								
2,4,5-TP	<	1.00	mg/l	EPA 8151	JLS	06/12/98	0425	123660
2,4-D	<	1.00	mg/l	EPA 8151				
TCLP Pesticides - 8 items								

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: South Carolina Electric & Gas
Mail Code 331
P.O. Box 88
Jenkensville, South Carolina 29065
Contact: Mr. Hascal Goff

cc: SCEG00397 Report Date: June 16, 1998

Sample ID : 006-A-OUTLET

Parameter	Qualifier	Result	Units	Method	Analyst	Date	Time	Batch
Chlordane	<	0.0125	mg/l	EPA 8080	SJ	06/11/98	1451	123762
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Heptachlor	<	0.00100	mg/l	EPA 8080				
Heptachlor & Hep. Epoxide	<	0.00200	mg/l	EPA 8080				
Heptachlor epoxide	<	0.00100	mg/l	EPA 8080				
Methoxychlor	<	1.00	mg/l	EPA 8080				
Toxaphene	<	0.0500	mg/l	EPA 8080				
gamma-BHC	<	0.0400	mg/l	EPA 8080				
Metals Analysis								
Mercury	<	0.0200	mg/l	EPA 7471	RMJ	06/09/98	0129	123744
Silver	<	25.0	ug/l	EPA 6010A	MBL	06/09/98	0921	123684
Arsenic	<	25.0	ug/l	EPA 6010A				
Barium		77.3	ug/l	EPA 6010A				
Cadmium	<	25.0	ug/l	EPA 6010A				
Chromium	<	25.0	ug/l	EPA 6010A				
Lead	<	25.0	ug/l	EPA 6010A				
Selenium	<	25.0	ug/l	EPA 6010A				

The following prep procedures were performed:

GC/MS Acid Compounds	EPA 3510	MAL	06/08/98	1530	123659
GC/MS Base/Neutral Compounds	EPA 3510	MAL	06/08/98	1530	123659
Herbicides	EPA 8150	HDB	06/08/98	1600	123660
Pesticides	EPA 3510	JPB	06/09/98	1000	123762
Mercury	EPA 7470	RMJ	06/08/98	2030	123744
TCLP Extraction - Semivolatiles	EPA 1311	JL	06/07/98	1615	123650
TCLP Extraction - Volatiles	EPA 1311	JL	06/08/98	1555	123651
TCLP Prep for Metals	EPA 1311	JL	06/07/98	1615	123649

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SC	10120	10582
TN	02934	02934

Client: South Carolina Electric & Gas
Mail Code 331
P.O. Box 88
Jenkensville, South Carolina 29065

Contact: Mr. Hascal Goff

cc: SCEG00397 Report Date: June 16, 1998

Sample ID : 006-A-OUTLET

Parameter	Qualifier	Result	Units	Method	Analyst	Date	Time	Batch

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Tom Seabrook at (803) 556-8171.

Thomas M. Seabrook

Reviewed By

SCE600357

CHAIN OF CUSTODY RECORD

980611 5%

Page_____ of _____

General Engineering Laboratories, Inc.
2040 Savage Road
Charleston, South Carolina 29407
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

Client Name/Facility Name: V.C. Summer Station

Collected by/Company: John Hemphill/SCE&G

SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods

Use F or P in the boxes to indicate whether sample was filtered and/or preserved

33153

SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	Full TCLP	Gamma Spec	Remarks	
XXoff Inlet	6/1/98	1430hrs				✓	6	X	X		1 2
DDG5 Outlet	6/1/98	1400hrs				✓	6	X	X		1 2

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
John Hemphill	6/2/98	1450	[illegible]	[illegible]			

Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:
			[illegible]			

V. C. Summer Nuclear Station

Environmental Lab Sample Tracking Form

1. Sample Collection

Sample Code	S2063298

Description / Remarks: ALUM SMOKE POND (6A) Composite of samples 1-6

*See gamma analysis of samples 1-6

Date Start	Date Stop	By
10-AUG-1998		JGO/WAS

2. Sample Preparation

Date	By	Geo. Code	Tare Wt.	Gross Wt.	Dilution	Volume	Analysis Type
18-AUG-1998	JGO	1000	25g	125g	—	0.1Kg	GAMMA

Charcoal Batch # / Charcoal CF: / Self Absorption Factor(s): Alpha: / Beta: / Alpha: / Beta: / Alpha: / Beta: /

Reviewed By / Date
[illegible] 8/19/98

Preparation Remarks: * REVIEW OF PREPARATION

FOR INFORMATION ONLY

3. Sample Counting / Analysis

Sample Code	Detector	Count Start Date	Time (Sec.)	By	Analysis Date	By
S2063298	3	19-AUG-1998	24K	W	19-AUG-1998	W

Analysis Remarks: Cs137 = 6.78 E-8 uCi/g = 6.78 E+1 pCi/Kg
ENVIRONMENTAL LEVEL AT CONTROL SITE = 3.44 E+R pCi/Kg
CONTROL SITE MEAN SHOWS STDE 5122 1593 pCi

4. Results

Reviewed By / Date	Filed By / Date(1)
8/20/98	[illegible] 8/20/98

Note: (1) Insure the Sample Collection [illegible]

****
19-AUG-1998 07:43:18.04

SOUTH CAROLINA ELECTRIC & GAS
V.C. SUMMER NUCLEAR STATION
****

SAMPLE TITLE : ENV - ALUM SLUDGE POND 6A COMPOSITE EVAP. SAMPLES 1-6-

SAMPLE TIME	: 10-AUG-1998 14:00	* OPERATOR	: SMITH_W
		* SAMPLE GEOMETRY	: 100
SAMPLE ID	: S7063298	* SHELF NUMBER	: 0
REASON FOR ANALYSIS	: Routine	* EFFICIENCY FILE	: 1000
TYPE OF SAMPLE	: 100ML CVNPA	* SAMPLE QUANTITY	: 1.00000E+02 G

****

ACQUIRE DATE & TIME	: 18-AUG-1998 14:41	* DEADTIME (%)	: 2.55794E-02
PRESET LIVE TIME (MIN)	: 0 06:40:00	* SENSITIVITY	: 4.00000
ELASPED REAL TIME (MIN)	: 0 06:40:06	* SHAPE PARAMETER	: 5.00000
ELAPSED LIVE TIME (MIN)	: 0 06:40:00	* NBR ITERATIONS	: 10

****

DETECTOR	: Detector 3	* LIBRARY	: SEDIMENT
ENERGY TOLERANCE	: 1.20 keV	* HALF LIFE RATIO	: 9.00000
ACT. CONV. FACTOR	: 1.00000E+00	* ABUNDANCE LIMIT	: 71.0%
PEAK START CHANNEL	: 100	* PEAK END CHANNEL	: 4096

****

EFFICIENCY CAL DATE	: 31-JAN-1996 10:33	* EFF FACTOR 1 (G)	: 9.47775E+02
KEV/CHAN (A)	: 5.00520E-01	* EFF FACTOR 2 (H)	: -4.41970E+00
OFFSET (B)	: -2.74573E-01 keV	* EFF FACTOR 3 (J)	: 9.18147E-01
Q COEFFICIENT (C)	: -7.44693E-08	* EFF FACTOR 4 (K)	: -1.65205E-02
FWHM SLOPE (D)	: 3.51702E-02	* EFF FACTOR 5 (L)	: -1.16143E-01
FWHM OFFSET (E)	: 5.15745E-01	* EFF FACTOR 6 (M)	: -1.16143E-01
		* EFF FACTOR 7 (N)	: -1.99680E-02

FOR INFORMATION ONLY

****

ENERGY = B + (A * channel) + C * channel**2

FWHM = E + D * SQRT(energy)

ln(EFF) = H + J*X + K*X**2 + L*X**3 + M*X**4 + N*X**5
where X = ln(G/energy)

****
ANALYSIS : PEAK V16.5, NID V3.1, MINACT V2.5, INTERF/KEY V2.4, WTMEAN/KEY V1.8
****

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	63.53	1319	1523	0.94	127.48	124	8	11.6		TH-234
1	93.03	329	1167	1.22	186.43	166	26	81.3	6.88E+01	X-RAY

Post-NID Peak Search Report (continued)
Sample ID : S7063298 Acquisition date : 18-AUG-1998 14:41:09

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
1	99.55	212	782	1.18	199.44	195	8	46.4	4.48E+00	X-RAY
										AC-228
1	109.23	147	831	1.15	218.79	216	15	67.2	2.86E+00	U-235
0	129.34	244	1006	0.78	258.96	256	8	46.7		AC-228
0	144.07	153	995	1.12	288.40	285	8	73.1		U-235
0	154.47	172	848	1.04	309.18	306	8	60.7		AC-228
1	186.09	583	811	1.10	372.35	367	11	86.0	1.65E+00	RA-226
0	209.52	325	597	0.73	419.18	416	7	27.3		AC-228
5	238.84	3909	475	0.92	477.76	472	18	3.7	4.44E+00	PB-212
5	241.61	889	682	1.71	483.29	472	18	17.4		PB 214
0	270.34	379	625	1.21	540.71	536	10	26.7		AC-228
0	277.90	134	529	0.90	555.82	552	8	62.1		TL-208
0	295.44	995	547	1.02	590.86	586	9	10.6		PB 214
0	300.30	231	528	1.06	600.58	597	9	38.3		PB-212
0	328.03	126	468	0.97	655.99	653	8	62.0		AC-228
0	338.49	715	567	1.05	676.89	672	10	14.5		AC-228
0	352.14	1603	440	1.07	704.17	699	9	6.9		PB 214
0	409.73	146	337	1.40	819.25	815	9	48.1		AC-228
0	463.11	212	390	1.02	925.93	921	11	38.5		AC-228
0	477.98	425	388	1.17	955.64	951	12	20.8		BE-7
0	511.18	815	545	1.62	1022.00	1015	16	14.6		ANNIH
0	562.54	78	309	1.21	1124.64	1119	12	93.2		AC-228
0	583.48	1119	265	1.27	1166.49	1159	12	8.3		TL-208
0	609.55	1298	341	1.32	1218.60	1211	14	8.2		BI-214
0	661.67	85	226	1.60	1322.77	1317	11	71.6		CS-137
1	727.56	270	193	1.44	1454.46	1446	16	23.2	8.04E-01	BI-212
1	786.06	51	143	1.99	1571.39	1568	8	85.6	1.95E+00	PB 214
0	795.20	116	196	0.94	1589.67	1584	11	50.0		AC-228
0	835.75	54	146	1.51	1670.73	1667	9	86.3		AC-228
0	860.77	190	125	1.73	1720.75	1713	12	27.7		TL-208
0	911.54	817	228	1.49	1822.22	1814	16	10.8		AC-228
0	934.39	119	95	1.40	1867.90	1862	12	37.5		BI-214
1	965.12	141	163	1.77	1929.34	1922	23	39.6	7.35E-01	AC-228
1	969.40	463	129	1.61	1937.90	1922	23	13.5		AC-228
0	1001.17	62	140	1.34	2001.41	1998	12	79.3		PA-234M
0	1121.15	248	163	1.98	2241.27	2235	16	26.7		BI-214
0	1238.18	141	73	1.15	2475.25	2468	14	30.8		BI-214
0	1378.14	88	65	2.32	2755.10	2749	13	43.4		BI-214
0	1461.31	640	58	1.83	2921.40	2912	18	9.7		K-40
0	1509.96	50	42	1.55	3018.68	3015	9	53.8		BI-214
0	1765.43	187	44	2.08	3529.59	3521	16	21.5		BI-214

Minimum Detectable Activity Report
Sample ID : S7063298

Acquisition date : 18-AUG-1998 14:41:09

Nuclide	Bckgnd Sum	Energy (keV)	MDA (UCI/G)
CR-51	363.	320.08	4.1406E-07
MN-54	203.	834.83	5.6158E-08
CO-57	669.	122.06	2.7776E-08
CO-58	136.	810.76	4.7948E-08
FE-59	109.	1099.22	1.0439E-07
CO-60	125.	1173.22	5.9414E-08
ZN-65	123.	1115.52	1.1279E-07
NB-95	239.	765.79	6.5153E-08
ZR-95	216.	756.72	1.0288E-07
I-131	301.	364.48	8.3227E-08
CS-134	214.	604.70	4.3964E-08
BA-140	237.	537.32	2.5242E-07
LA-140	62.	1596.49	8.8709E-08

LLD
Cs134 = 1.5 E^{-7} µci/g
Cs137 = 1.8 E^{-7} µci/g

REPORT NAME : QA_CHECK (V5.3) PAGE : 1
REPORT DATE : 19-AUG-1998 07:43
OPERATOR : SMITH_W

SOUTH CAROLINA ELECTRIC AND GAS
V.C. SUMMER NUCLEAR GENERATING STATION

POST NID ANALYSIS REPORT

TITLE : ENV - ALUM SLUDGE POND 6A COMPOSITE EVAP. SAMPLES 1-6-

SAMPLE No. : S7063298
SAMPLE TYPE : 100ML CVNPA
COUNT TIME : 18-AUG-1998 14:41:09
SAMPLE TIME : 10-AUG-1998 14:00:00
LIBRARY : SEDIMENT

OPERATOR NAME : SMITH_W
SAMPLE GEOMETRY : 100
SAMPLE QUANTITY : 1.00000E+02
DETECTOR : Detector 3

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR UCI/G	COMMENTS
BE-7	477.59	-0.38	2.333E-06	QA Results OK
K-40	1460.81	-0.50	8.271E-06	QA Results OK
CS-137	661.65	-0.02	6.782E-08	QA Results OK
TL-208	583.14	-0.34	8.088E-07	QA Results OK
BI-212	727.17	-0.39	1.687E-06	QA Results OK
PB-212	238.63	-0.21	2.644E-06	QA Results OK
BI-214	609.31	-0.24	1.767E-06	QA Results OK
PB 214	351.92	-0.22	1.737E-06	QA Results OK
RA-226	186.21	0.13	4.474E-06	QA Results OK
AC-228	911.07	-0.47	2.670E-06	QA Results OK
ANNIH	511.00	-0.18	4.427E-07	QA Results OK
PA-234M	1001.03	-0.14	1.037E-05	QA Results OK
TH-234	63.29	-0.24	6.046E-06	QA Results OK
U-235	143.76	-0.31	3.104E-07	QA Results OK
X-RAY	74.82	0.00	0.000E+00	* Key Line Not Found
AVG ENERGY DIFF =		-0.25	4.363E-05 = TOTAL GAMMA ACTIVITY	

OK
LA
8/19/98

93.03 KeV Peak was used in identifying 2 isotopes
99.55 KeV Peak was used in identifying 2 isotopes
186.09 KeV Peak was used in identifying 2 isotopes
727.56 KeV Peak was used in identifying 2 isotopes
786.06 KeV Peak was used in identifying 2 isotopes
965.12 KeV Peak was used in identifying 2 isotopes

UNIDENTIFIED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	% ERROR	POTEN. ID

No Unidentified Peaks

SOUTH CAROLINA ELECTRIC AND GAS
V.C. SUMMER NUCLEAR GENERATING STATION

POST NID ANALYSIS REPORT

REVIEWED BY : W Smith DATE : 8/19/98

Sample parameters have been modified by the operator
Analysis parameters have been modifed by the operator

V. C. Summer Nuclear Station

Environmental Lab Sample Tracking Form

1. Sample Collection

Sample Code	S_06A3298

Description / Remarks: ALUM SLUDG POND
6A samples 1-6

* See attached analysis

Date Start	Date Stop	By
15-AUG-1998 *	— : —	DMS/WHS

2. Sample Preparation

Date	By	Geo. Code	Tare Wt.	Gross Wt.	Dilu-tion	Volume	Analysis Type
10-AUG-1998		ALMLO	98 (Lid) 136 (Marin)	*	—	*	GAMMA

Charcoal Batch # ___ Charcoal CF: ___

Self Absorption Factor(s): Alpha: ___ Beta: ___ Alpha: ___ Beta: ___ Alpha: ___ Beta: ___

Sample Prep. Reviewed By / Date	
[signature]	8/13/98

Preparation Remarks: * See attached analysis for gross wts + volumes

FOR INFORMATION ONLY

3. Sample Counting / Analysis

Sample Code	Detec-tor	Count Start Date	Time (Sec.)	By	Analysis Date	By
S_06A3298	*	* - * - *	24h		* - * - *	
		- -			- -	
		- -			- -	
		- -			- -	
		- -			- -	

Analysis Remarks: * SEE ATTACHED ANALYSIS

4. Results

Reviewed By / Date	Filed By / Date(1)
[signature] 8/13/98	W. Smith 8/13/98

Note: (1) Insure the Sample Collection Log Sheet is updated.

RARC II, I3 or I4

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****************************************
11-AUG-1998 09:27:51.20

SOUTH CAROLINA ELECTRIC & GAS
V.C. SUMMER NUCLEAR STATION
****************************************

SAMPLE TITLE : ENV - ALUM SLUDGE POND 6A SAMPLE 1-

SAMPLE TIME              : 10-AUG-1998 15:00   * OPERATOR          : DICORTE_G
                                               * SAMPLE GEOMETRY   : 1LML
SAMPLE ID                : S106A3298           * SHELF NUMBER      : 0
REASON FOR ANALYSIS      : Routine             * EFFICIENCY FILE   : 1LML0
TYPE OF SAMPLE           : 1L LIQUID SAMPLE    * SAMPLE QUANTITY   : 1.05800E+00 L
*************************************************************************************

ACQUIRE DATE & TIME      : 10-AUG-1998 16:12   * DEADTIME (%)      : 2.37492E-02
PRESET  LIVE TIME (MIN)  : 0 06:40:00          * SENSITIVITY        : 4.00000
ELASPED REAL TIME (MIN)  : 0 06:40:05          * SHAPE PARAMETER    : 5.00000
ELAPSED LIVE TIME (MIN)  : 0 06:40:00          * NBR ITERATIONS     : 10
*************************************************************************************

DETECTOR                 : Detector 4          * LIBRARY            : SEDIMENT
ENERGY TOLERANCE         : 1.20 keV            * HALF LIFE RATIO    : 9.00000
ACT. CONV. FACTOR        : 1.00000E+06         * ABUNDANCE LIMIT    : 71.0%
PEAK START CHANNEL       :  100                * PEAK END CHANNEL   : 4096

*************************************************************************************

EFFICIENCY CAL DATE      : 28-JUL-1998 13:15   * EFF FACTOR 1 (G)   : 9.47775E+02
KEV/CHAN       (A)       : 5.00020E-01         * EFF FACTOR 2 (H)   : -5.35111E+00
OFFSET         (B)       : 1.26470E-01 keV     * EFF FACTOR 3 (J)   : 9.16800E-01
Q COEFFICIENT  (C)       : -1.33148E-08        * EFF FACTOR 4 (K)   : 1.36644E-02
FWHM SLOPE     (D)       : 3.08246E-02         * EFF FACTOR 5 (L)   : -5.70758E-03
FWHM OFFSET    (E)       : 6.18800E-01         * EFF FACTOR 6 (M)   : -5.70758E-03

                                               * EFF FACTOR 7 (N)   : -2.22683E-02

*************************************************************************************
```

FOR INFORMATION ONLY

ENERGY = B + (A * channel) + C * channel**2

FWHM = E + D * SQRT(energy)

ln(EFF) = H + J*X + K*X**2 + L*X**3 + M*X**4 + N*X**5
where X = ln(G/energy)

```
*************************************************************************************
ANALYSIS : PEAK V16.5, NID V3.1, MINACT V2.5, INTERF/KEY V2.4, WTMEAN/KEY V1.8
*************************************************************************************
```

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
1	63.24	67	312	0.96	126.23	123	7	90.6	2.64E+00	TH-234
1	92.80	248	379	1.46	185.34	163	28	32.0	6.97E+00	TH-234

Sample ID : S106A3298 Acquisition date : 10-AUG-1998 16:12:03

:t	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	185.70	251	366	1.12	371.14	365	13	33.8		RA-226
7	238.78	710	142	1.20	477.30	471	19	9.1	3.13E+00	PB-212
7	241.66	126	217	1.96	483.05	471	19	63.2		PB 214
0	270.07	62	144	0.93	539.87	536	9	74.3		AC-228
0	295.33	157	147	1.19	590.39	586	10	32.9		PB 214
0	300.15	39	120	1.22	600.04	597	7	98.8		PB-212
0	338.27	92	162	0.90	676.27	671	11	57.5		AC-228
0	352.12	237	103	1.12	703.97	700	9	20.3		PB 214
0	477.80	77	70	1.91	955.33	950	12	48.8		BE-7
0	511.23	269	103	2.00	1022.19	1015	18	21.8		ANNIH
0	583.51	153	85	1.16	1166.76	1160	11	27.0		TL-208
0	609.33	215	48	1.35	1218.40	1212	12	18.8		BI-214
1	727.21	30	37	2.35	1454.16	1450	10	85.8	8.53E-01	BI-212
0	911.28	114	41	1.46	1822.32	1814	15	31.0		AC-228
0	969.11	64	30	1.74	1937.99	1932	11	41.7		AC-228
0	1121.31	52	40	1.92	2242.41	2234	19	66.1		BI-214
0	1461.34	89	17	1.48	2922.54	2915	16	30.7		K-40
0	1730.62	11	6	1.63	3461.17	3457	7	99.4		BI-214
0	1764.90	33	9	1.53	3529.73	3523	11	48.4		BI-214

ample ID : S106A3298 Acquisition date : 10-AUG-1998 16:12:03

uclide	Bckgnd Sum	Energy (keV)	MDA (PCI/L)
R-51	109.	320.08	4.0771E+01
N-54	29.	834.83	5.0356E+00
O-57	218.	122.06	3.8476E+00
O-58	31.	810.76	5.0833E+00
E-59	30.	1099.22	1.1692E+01
O-60	26.	1173.22	6.4237E+00
N-65	22.	1115.52	1.1144E+01
B-95	52.	765.79	6.2212E+00
R-95	38.	756.72	9.4860E+00
-131	72.	364.48	4.5718E+00
S-134	55.	604.70	5.2206E+00
S-137	46.	661.65	5.9437E+00
A-140	50.	537.32	1.7682E+01
A-140	16.	1596.49	7.1162E+00

REPORT NAME : QA_CHECK (V5.3)
REPORT DATE : 11-AUG-1998 09:27
OPERATOR : DICORTE_G

SOUTH CAROLINA ELECTRIC AND GAS
V.C. SUMMER NUCLEAR GENERATING STATION

POST NID ANALYSIS REPORT

TITLE : ENV - ALUM SLUDGE POND 6A SAMPLE 1-

SAMPLE No. : S106A3298
SAMPLE TYPE : 1L LIQUID SAMPLE
COUNT TIME : 10-AUG-1998 16:12:03
SAMPLE TIME : 10-AUG-1998 15:00:00
LIBRARY : SEDIMENT

OPERATOR NAME : DICORTE_G
SAMPLE GEOMETRY : 1LML
SAMPLE QUANTITY : 1.05800E+00
DETECTOR : Detector 4

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR PCI/L	COMMENTS
BE-7	477.59	-0.20	8.816E+01	QA Results OK
K-40	1460.81	-0.53	2.770E+02	QA Results OK
TL-208	583.14	-0.37	2.605E+01	QA Results OK
BI-212	727.17	-0.04	4.490E+01	QA Results OK
PB-212	238.63	-0.16	1.014E+02	QA Results OK
BI-214	609.31	-0.02	6.928E+01	QA Results OK
PB 214	351.92	-0.20	5.689E+01	QA Results OK
RA-226	186.21	0.51	4.094E+02	QA Results OK
AC-228	911.07	-0.21	8.878E+01	QA Results OK
ANNIH	511.00	-0.23	3.411E+01	QA Results OK
TH-234	63.29	0.05	2.079E+02	QA Results OK
AVG ENERGY DIFF =		-0.13	1.404E+03 = TOTAL GAMMA ACTIVITY	

727.21 KeV Peak was used in identifying 2 isotopes

UNIDENTIFIED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	% ERROR	POTEN. ID

No Unidentified Peaks

REVIEWED BY : L. Smith DATE : 8/11/98

Sample parameters have been modified by the operator
Analysis parameters have been modifed by the operator

****
11-AUG-1998 14:25:58.84

SOUTH CAROLINA ELECTRIC & GAS
V.C. SUMMER NUCLEAR STATION
****

SAMPLE TITLE : ENV - ALUM SLUDGE POND 6A SAMPLE 2-

SAMPLE TIME	: 10-AUG-1998 15:05	* OPERATOR	: DICORTE_G
		* SAMPLE GEOMETRY	: 1LML
SAMPLE ID	: S206A3298	* SHELF NUMBER	: 0
REASON FOR ANALYSIS	: Routine	* EFFICIENCY FILE	: 1LML0
TYPE OF SAMPLE	: 1L LIQUID SAMPLE	* SAMPLE QUANTITY	: 1.05200E+00 L

****

ACQUIRE DATE & TIME	: 11-AUG-1998 07:05	* DEADTIME (%)	: 7.45387E-03
PRESET LIVE TIME (MIN)	: 0 06:40:00	* SENSITIVITY	: 4.00000
ELASPED REAL TIME (MIN)	: 0 06:40:01	* SHAPE PARAMETER	: 5.00000
ELAPSED LIVE TIME (MIN)	: 0 06:40:00	* NBR ITERATIONS	: 10

****

DETECTOR	: Detector 1	* LIBRARY	: SEDIMENT
ENERGY TOLERANCE	: 1.20 keV	* HALF LIFE RATIO	: 9.00000
ACT. CONV. FACTOR	: 1.00000E+06	* ABUNDANCE LIMIT	: 71.0%
PEAK START CHANNEL	: 100	* PEAK END CHANNEL	: 4096

****

EFFICIENCY CAL DATE	: 29-JUL-1998 09:30	* EFF FACTOR 1 (G)	: 9.47775E+02
KEV/CHAN (A)	: 5.00335E-01	* EFF FACTOR 2 (H)	: -4.80194E+00
OFFSET (B)	: -6.79466E-02 keV	* EFF FACTOR 3 (J)	: 8.78326E-01
Q COEFFICIENT (C)	: -4.27569E-08	* EFF FACTOR 4 (K)	: 1.67295E-02
FWHM SLOPE (D)	: 3.14379E-02	* EFF FACTOR 5 (L)	: -9.89127E-02
FWHM OFFSET (E)	: 6.48499E-01	* EFF FACTOR 6 (M)	: -9.89127E-02
		* EFF FACTOR 7 (N)	: -3.07513E-02

FOR INFORMATION ONLY

****

ENERGY = B + (A * channel) + C * channel**2

FWHM = E + D * SQRT(energy)

ln(EFF) = H + J*X + K*X**2 + L*X**3 + M*X**4 + N*X**5
where X = ln(G/energy)

****
ANALYSIS : PEAK V16.5, NID V3.1, MINACT V2.5, INTERF/KEY V2.4, WTMEAN/KEY V1.8
****

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
1	84.17	76	406	1.13	168.37	165	7	90.7	1.04E+00	X-RAY TH-228

ample ID : S206A3298 Acquisition date : 11-AUG-1998 07:05:18

t	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	185.95	234	440	1.12	371.80	366	11	37.1		RA-226
0	209.07	130	367	1.10	418.01	413	11	59.7		AC-228
7	238.61	889	208	1.03	477.05	472	18	8.4	8.59E-01	PB-212
7	241.63	222	298	1.76	483.09	472	18	38.0		PB 214
0	295.04	293	277	1.36	589.85	583	14	26.8		PB 214
0	300.43	75	190	0.97	600.63	597	9	69.7		PB-212
0	327.40	60	165	1.08	654.54	650	9	81.2		AC-228
0	338.10	115	169	0.84	675.92	672	8	42.3		AC-228
0	351.80	367	201	1.19	703.30	698	11	18.2		PB 214
0	462.86	49	102	0.97	925.32	920	11	84.6		AC-228
0	476.73	94	161	1.35	953.03	947	14	60.8		BE-7
0	510.74	382	199	1.53	1021.01	1013	17	19.8		ANNIH
0	583.30	325	86	1.47	1166.08	1159	15	16.8		TL-208
0	609.30	282	85	1.12	1218.05	1212	10	17.1		BI-214
1	726.94	44	76	2.15	1453.22	1448	12	84.8	1.11E+00	BI-212
0	768.45	32	75	3.38	1536.21	1530	13	117.5		BI-214
0	860.51	52	21	1.96	1720.25	1715	10	44.0		TL-208
0	910.98	192	57	1.74	1821.16	1812	19	23.8		AC-228
0	968.86	98	24	1.53	1936.88	1933	9	26.7		AC-228
0	1120.06	70	36	1.02	2239.19	2234	10	38.0		BI-214
0	1408.41	29	20	0.92	2815.75	2806	16	77.9		BI-214
0	1460.72	166	26	1.98	2920.36	2914	16	21.6		K-40
0	1592.65	17	10	2.76	3184.17	3180	8	79.6		TL-208DE
0	1764.92	58	24	1.73	3528.68	3520	18	49.5		BI-214

Minimum Detectable Activity Report
Sample ID : S206A3298

Acquisition date : 11-AUG-1998 07:05:18

Nuclide	Bckgnd Sum	Energy (keV)	MDA (PCI/L)
CR-51	146.	320.08	3.0391E+01
MN-54	58.	834.83	4.1542E+00
CO-57	330.	122.06	3.2946E+00
CO-58	47.	810.76	3.6859E+00
FE-59	45.	1099.22	8.2687E+00
CO-60	40.	1173.22	4.6292E+00
ZN-65	36.	1115.52	8.2480E+00
NB-95	72.	765.79	4.3407E+00
ZR-95	72.	756.72	7.7106E+00
I-131	135.	364.48	4.1212E+00
CS-134	83.	604.70	3.8310E+00
CS-137	82.	661.65	4.7061E+00
BA-140	86.	537.32	1.4319E+01
LA-140	18.	1596.49	4.3613E+00

REPORT NAME : QA_CHECK (V5.3)
REPORT DATE : 11-AUG-1998 14:25
OPERATOR : DICORTE_G

SOUTH CAROLINA ELECTRIC AND GAS
V.C. SUMMER NUCLEAR GENERATING STATION

POST NID ANALYSIS REPORT

TITLE : ENV - ALUM SLUDGE POND 6A SAMPLE 2-

SAMPLE No.	: S206A3298	OPERATOR NAME	: DICORTE_G
SAMPLE TYPE	: 1L LIQUID SAMPLE	SAMPLE GEOMETRY	: 1LML
COUNT TIME	: 11-AUG-1998 07:05:18	SAMPLE QUANTITY	: 1.05200E+00
SAMPLE TIME	: 10-AUG-1998 15:05:00	DETECTOR	: Detector 1
LIBRARY	: SEDIMENT		

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR PCI/L	COMMENTS
BE-7	477.59	0.86	6.568E+01	QA Results OK
K-40	1460.81	0.09	2.920E+02	QA Results OK
TL-208	583.14	-0.16	3.295E+01	QA Results OK
TL-208D	1592.66	0.01	0.000E+00	QA Results OK
BI-212	727.17	0.23	3.894E+01	QA Results OK
PB-212	238.63	0.02	8.403E+01	QA Results OK
BI-214	609.31	0.01	5.399E+01	QA Results OK
PB 214	351.92	0.12	5.547E+01	QA Results OK
RA-226	186.21	0.26	2.598E+02	QA Results OK
AC-228	911.07	0.09	8.717E+01	QA Results OK
ANNIH	511.00	0.26	2.911E+01	QA Results OK
TH-228	84.37	0.20	2.720E+02	QA Results OK
X-RAY	74.82	0.00	0.000E+00	* Key Line Not Found
AVG ENERGY DIFF =		0.17	1.271E+03	= TOTAL GAMMA ACTIVITY

84.17 KeV Peak was used in identifying 2 isotopes
726.94 KeV Peak was used in identifying 2 isotopes

UNIDENTIFIED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	% ERROR	POTEN. ID

No Unidentified Peaks

REVIEWED BY : W Timothy DATE : 8/11/98

Sample parameters have been modified by the operator
Analysis parameters have been modifed by the operator

****
11-AUG-1998 14:38:30.88

SOUTH CAROLINA ELECTRIC & GAS
V.C. SUMMER NUCLEAR STATION
****

SAMPLE TITLE : ENV - ALUM SLUGE POND 6A SAMPLE 3-

SAMPLE TIME	: 10-AUG-1998 15:10	* OPERATOR	: DICORTE_G
		* SAMPLE GEOMETRY	: 1LML
SAMPLE ID	: S306A3298	* SHELF NUMBER	: 0
REASON FOR ANALYSIS	: Routine	* EFFICIENCY FILE	: 1LML0
TYPE OF SAMPLE	: 1L LIQUID SAMPLE	* SAMPLE QUANTITY	: 1.01900E+00 L

****

ACQUIRE DATE & TIME	: 11-AUG-1998 07:07	* DEADTIME (%)	: 1.27507E-02
PRESET LIVE TIME (MIN)	: 0 06:40:00	* SENSITIVITY	: 4.00000
ELASPED REAL TIME (MIN)	: 0 06:40:03	* SHAPE PARAMETER	: 5.00000
ELAPSED LIVE TIME (MIN)	: 0 06:40:00	* NBR ITERATIONS	: 10

****

DETECTOR	: Detector 2	* LIBRARY	: SEDIMENT
ENERGY TOLERANCE	: 1.20 keV	* HALF LIFE RATIO	: 9.00000
ACT. CONV. FACTOR	: 1.00000E+06	* ABUNDANCE LIMIT	: 71.0%
PEAK START CHANNEL	: 100	* PEAK END CHANNEL	: 4096

****

EFFICIENCY CAL DATE	: 28-JUL-1998 19:07	* EFF FACTOR 1 (G)	: 9.47775E+02
KEV/CHAN (A)	: 5.00036E-01	* EFF FACTOR 2 (H)	: -4.51490E+00
OFFSET (B)	: 1.93330E-01 keV	* EFF FACTOR 3 (J)	: 8.51920E-01
Q COEFFICIENT (C)	: -2.21015E-08	* EFF FACTOR 4 (K)	: -9.64716E-03
FWHM SLOPE (D)	: 3.17770E-02	* EFF FACTOR 5 (L)	: -1.08814E-01
FWHM OFFSET (E)	: 6.27066E-01	* EFF FACTOR 6 (M)	: -1.08814E-01
		* EFF FACTOR 7 (N)	: -3.55245E-02

FOR INFORMATION ONLY

****

ENERGY = B + (A * channel) + C * channel**2

FWHM = E + D * SQRT(energy)

ln(EFF) = H + J*X + K*X**2 + L*X**3 + M*X**4 + N*X**5
where X = ln(G/energy)

****
ANALYSIS : PEAK V16.5, NID V3.1, MINACT V2.5, INTERF/KEY V2.4, WTMEAN/KEY V1.8
****

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	63.30	94	444	1.01	126.21	123	8	80.0		TH-234
0	93.06	280	475	1.26	185.72	182	9	30.6		TH-234

Sample ID : S306A3298 Acquisition date : 11-AUG-1998 07:07:48

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
1	185.97	209	268	0.98	371.53	366	10	28.1	2.46E+00	RA-226
0	209.16	93	370	1.11	417.92	414	9	77.3		AC-228
8	238.71	852	199	1.02	477.00	472	16	8.6	3.82E+00	PB-212
8	241.65	205	356	1.64	482.89	472	16	38.8		PB 214
0	270.75	80	270	1.01	541.08	536	11	82.5		AC-228
0	295.29	226	215	1.00	590.17	586	9	26.9		PB 214
0	338.24	145	245	0.86	676.06	671	10	43.6		AC-228
1	352.17	386	165	1.20	703.93	697	14	16.3	3.55E+00	PB 214
0	462.35	73	130	3.44	924.28	919	11	64.7		AC-228
0	477.31	135	168	1.19	954.21	948	12	42.1		BE-7
0	511.04	506	183	2.23	1021.66	1013	17	15.1		ANNIH
0	583.48	277	125	1.32	1166.56	1161	13	20.6		TL-208
0	609.62	326	131	1.36	1218.83	1211	16	19.2		BI-214
1	727.97	84	65	2.39	1455.54	1451	11	45.2	2.68E+00	BI-212
0	768.64	28	62	0.79	1536.89	1532	8	105.7		BI-214
0	795.75	60	69	1.88	1591.11	1584	14	64.9		AC-228
0	911.45	172	62	1.59	1822.52	1815	12	23.6		AC-228
0	969.22	113	61	1.37	1938.07	1933	11	32.9		AC-228
0	1120.54	68	52	1.30	2240.74	2235	10	44.5		BI-214
0	1238.68	56	44	3.80	2477.07	2469	19	62.3		BI-214
0	1461.20	190	20	2.28	2922.18	2916	17	18.3		K-40
0	1630.93	19	13	1.75	3261.70	3255	11	89.0		AC-228
0	1764.88	70	7	1.01	3529.67	3525	10	27.8		BI-214

inimum Detectable Activity Report
ample ID : S306A3298

Acquisition date : 11-AUG-1998 07:07:48

uclide	Bckgnd Sum	Energy (keV)	MDA (PCI/L)
R-51	173.	320.08	2.7262E+01
N-54	83.	834.83	3.8554E+00
O-57	323.	122.06	2.9640E+00
O-58	77.	810.76	3.6577E+00
E-59	46.	1099.22	6.4954E+00
O-60	38.	1173.22	3.4639E+00
N-65	51.	1115.52	7.5809E+00
B-95	82.	765.79	3.6167E+00
R-95	78.	756.72	6.2553E+00
-131	157.	364.48	3.6242E+00
S-134	87.	604.70	3.0794E+00
S-137	71.	661.65	3.4432E+00
A-140	101.	537.32	1.2357E+01
A-140	28.	1596.49	4.1683E+00

REPORT NAME : QA_CHECK (V5.3)
REPORT DATE : 11-AUG-1998 14:38
OPERATOR : DICORTE_G

SOUTH CAROLINA ELECTRIC AND GAS
V.C. SUMMER NUCLEAR GENERATING STATION

POST NID ANALYSIS REPORT

TITLE : ENV - ALUM SLUGE POND 6A SAMPLE 3-

SAMPLE No.	: S306A3298	OPERATOR NAME	: DICORTE_G
SAMPLE TYPE	: 1L LIQUID SAMPLE	SAMPLE GEOMETRY	: 1LML
COUNT TIME	: 11-AUG-1998 07:07:48	SAMPLE QUANTITY	: 1.01900E+00
SAMPLE TIME	: 10-AUG-1998 15:10:00	DETECTOR	: Detector 2
LIBRARY	: SEDIMENT		

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR PCI/L	COMMENTS
BE-7	477.59	0.28	7.537E+01	QA Results OK
K-40	1460.81	-0.39	2.570E+02	QA Results OK
TL-208	583.14	-0.35	2.219E+01	QA Results OK
BI-212	727.17	-0.80	5.779E+01	QA Results OK
PB-212	238.63	-0.08	6.771E+01	QA Results OK
BI-214	609.31	-0.31	4.923E+01	QA Results OK
PB 214	351.92	-0.25	4.761E+01	QA Results OK
RA-226	186.21	0.24	1.998E+02	QA Results OK
AC-228	911.07	-0.38	6.077E+01	QA Results OK
ANNIH	511.00	-0.04	3.077E+01	QA Results OK
TH-234	63.29	-0.01	2.145E+02	QA Results OK
AVG ENERGY DIFF =		-0.19	1.083E+03 = TOTAL GAMMA ACTIVITY	

727.97 KeV Peak was used in identifying 2 isotopes

UNIDENTIFIED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	% ERROR	POTEN. ID

No Unidentified Peaks

REVIEWED BY : [signature] DATE : 8/11/98

Sample parameters have been modified by the operator
Analysis parameters have been modifed by the operator

****
11-AUG-1998 14:52:44.75

SOUTH CAROLINA ELECTRIC & GAS
V.C. SUMMER NUCLEAR STATION
****

SAMPLE TITLE : ENV - ALUM SLUDGE POND 6A SAMPLE 4-

SAMPLE TIME	: 10-AUG-1998 15:15	* OPERATOR	: DICORTE_G
		* SAMPLE GEOMETRY	: 1LML
SAMPLE ID	: S406A3298	* SHELF NUMBER	: 0
REASON FOR ANALYSIS	: Routine	* EFFICIENCY FILE	: 1LML0
TYPE OF SAMPLE	: 1L LIQUID SAMPLE	* SAMPLE QUANTITY	: 1.02700E+00 L

****

ACQUIRE DATE & TIME	: 11-AUG-1998 07:11	* DEADTIME (%)	: 1.77865E-02
PRESET LIVE TIME (MIN)	: 0 06:40:00	* SENSITIVITY	: 4.00000
ELASPED REAL TIME (MIN)	: 0 06:40:04	* SHAPE PARAMETER	: 5.00000
ELAPSED LIVE TIME (MIN)	: 0 06:40:00	* NBR ITERATIONS	: 10

****

DETECTOR	: Detector 3	* LIBRARY	: SEDIMENT
ENERGY TOLERANCE	: 1.20 keV	* HALF LIFE RATIO	: 9.00000
ACT. CONV. FACTOR	: 1.00000E+06	* ABUNDANCE LIMIT	: 71.0%
PEAK START CHANNEL	: 100	* PEAK END CHANNEL	: 4096

****

EFFICIENCY CAL DATE	: 28-JUL-1998 16:21	* EFF FACTOR 1 (G)	: 9.47775E+02
KEV/CHAN (A)	: 5.00552E-01	* EFF FACTOR 2 (H)	: -4.57911E+00
OFFSET (B)	: -2.59841E-01 keV	* EFF FACTOR 3 (J)	: 9.23768E-01
Q COEFFICIENT (C)	: -7.80645E-08	* EFF FACTOR 4 (K)	: 4.61023E-02
FWHM SLOPE (D)	: 3.40535E-02	* EFF FACTOR 5 (L)	: -1.47592E-01
FWHM OFFSET (E)	: 5.43622E-01	* EFF FACTOR 6 (M)	: -1.47592E-01
		* EFF FACTOR 7 (N)	: -1.35892E-02

FOR INFORMATION ONLY

****

ENERGY = B + (A * channel) + C * channel**2

FWHM = E + D * SQRT(energy)

ln(EFF) = H + J*X + K*X**2 + L*X**3 + M*X**4 + N*X**5
where X = ln(G/energy)

****
ANALYSIS : PEAK V16.5, NID V3.1, MINACT V2.5, INTERF/KEY V2.4, WTMEAN/KEY V1.8
****

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	63.38	834	1095	0.91	127.14	123	9	15.9		TH-234

Sample ID : S406A3298 Acquisition date : 11-AUG-1998 07:11:18

:t	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	84.29	216	595	1.58	168.92	166	6	38.2		X-RAY
										TH-228
1	92.87	123	788	1.16	186.05	178	13	190.1	1.12E+01	X-RAY
0	128.57	96	898	1.16	257.38	253	10	118.4		AC-228
0	143.63	137	788	1.30	287.48	284	9	75.9		U-235
0	185.91	584	666	0.86	371.95	368	9	17.9		U-235
0	209.21	126	739	0.76	418.51	414	10	83.1		AC-228
7	238.68	1218	299	0.90	477.39	472	17	7.1	1.77E+00	PB-212
7	241.69	284	496	1.92	483.41	472	17	33.8		PB 214
0	270.11	91	421	1.41	540.18	536	9	83.9		AC-228
0	295.26	379	367	1.04	590.43	586	9	20.9		PB 214
0	300.26	59	292	0.95	600.44	598	7	99.4		PB-212
0	338.41	281	392	1.14	676.67	672	12	30.4		AC-228
0	352.14	571	438	1.11	704.09	697	13	17.3		PB 214
0	409.32	54	218	1.41	818.37	816	9	101.6		AC-228
0	462.92	79	118	0.93	925.46	923	6	49.1		AC-228
0	477.50	178	211	1.04	954.60	950	10	33.9		BE-7
0	510.78	498	325	1.68	1021.12	1014	14	17.8		ANNIH
0	583.32	353	225	1.36	1166.09	1161	11	19.7		TL-208
0	609.45	409	188	1.39	1218.32	1214	9	15.6		BI-214
1	727.06	86	138	1.49	1453.37	1446	13	55.9	8.32E-01	BI-212
0	836.05	46	54	1.04	1671.21	1668	8	62.2		AC-228
0	860.49	53	114	0.99	1720.06	1716	10	80.9		TL-208
0	911.18	228	101	1.57	1821.38	1816	11	21.7		AC-228
0	969.75	94	191	1.40	1938.46	1929	13	64.2		AC-228
0	1120.62	111	74	1.17	2240.07	2234	11	35.6		BI-214
0	1237.99	63	58	2.18	2474.73	2469	11	53.0		BI-214
0	1460.87	213	67	1.68	2920.37	2914	14	21.3		K-40
0	1764.45	108	23	1.86	3527.46	3518	18	28.1		BI-214

Minimum Detectable Activity Report
Sample ID : S406A3298

Acquisition date : 11-AUG-1998 07:11:18

Nuclide	Bckgnd Sum	Energy (keV)	MDA (PCI/L)
CR-51	262.	320.08	3.2561E+01
MN-54	118.	834.83	4.8041E+00
CO-57	508.	122.06	2.9282E+00
CO-58	103.	810.76	4.4147E+00
FE-59	88.	1099.22	9.5643E+00
CO-60	78.	1173.22	5.3373E+00
ZN-65	58.	1115.52	8.6782E+00
NB-95	165.	765.79	5.3277E+00
ZR-95	129.	756.72	8.3603E+00
I-131	211.	364.48	4.1119E+00
CS-134	192.	604.70	4.6679E+00
CS-137	172.	661.65	5.4899E+00
BA-140	164.	537.32	1.5840E+01
LA-140	50.	1596.49	6.0056E+00

REPORT NAME : QA_CHECK (V5.3) PAGE : 1
REPORT DATE : 11-AUG-1998 14:52
OPERATOR : DICORTE_G

SOUTH CAROLINA ELECTRIC AND GAS
V.C. SUMMER NUCLEAR GENERATING STATION

POST NID ANALYSIS REPORT

TITLE : ENV - ALUM SLUDGE POND 6A SAMPLE 4-

SAMPLE No. : S406A3298
SAMPLE TYPE : 1L LIQUID SAMPLE
COUNT TIME : 11-AUG-1998 07:11:18
SAMPLE TIME : 10-AUG-1998 15:15:00
LIBRARY : SEDIMENT

OPERATOR NAME : DICORTE_G
SAMPLE GEOMETRY : 1LML
SAMPLE QUANTITY : 1.02700E+00
DETECTOR : Detector 3

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR PCI/L	COMMENTS
BE-7	477.59	0.09	9.930E+01	QA Results OK
K-40	1460.81	-0.06	3.104E+02	QA Results OK
TL-208	583.14	-0.19	2.867E+01	QA Results OK
BI-212	727.17	0.11	6.060E+01	QA Results OK
PB-212	238.63	-0.06	9.259E+01	QA Results OK
BI-214	609.31	-0.14	6.291E+01	QA Results OK
PB 214	351.92	-0.22	6.881E+01	QA Results OK
AC-228	911.07	-0.11	8.470E+01	QA Results OK
ANNIH	511.00	0.22	3.032E+01	QA Results OK
TH-228	84.37	0.08	3.973E+02	QA Results OK
TH-234	63.29	-0.09	5.169E+02	QA Results OK
U-235	143.76	0.13	3.310E+01	QA Results OK
X-RAY	74.82	0.00	0.000E+00	* Key Line Not Found
AVG ENERGY DIFF =		-0.02	1.786E+03 = TOTAL GAMMA ACTIVITY	

ok WP 8/11/98

84.29 KeV Peak was used in identifying 2 isotopes
92.87 KeV Peak was used in identifying 2 isotopes
727.06 KeV Peak was used in identifying 2 isotopes

UNIDENTIFIED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	% ERROR	POTEN. ID

No Unidentified Peaks

REVIEWED BY : [signature] DATE : 8/11/98

Sample parameters have been modified by the operator
Analysis parameters have been modifed by the operator

****
11-AUG-1998 15:01:31.06

SOUTH CAROLINA ELECTRIC & GAS
V.C. SUMMER NUCLEAR STATION
****

AMPLE TITLE : ENV - ALUM SLUDGE POND 6A SAMPLE 5-

AMPLE TIME	: 10-AUG-1998 15:20	* OPERATOR	: DICORTE_G
		* SAMPLE GEOMETRY	: 1LML
AMPLE ID	: S506A3298	* SHELF NUMBER	: 0
EASON FOR ANALYSIS	: Routine	* EFFICIENCY FILE	: 1LML0
YPE OF SAMPLE	: 1L LIQUID SAMPLE	* SAMPLE QUANTITY	: 1.06900E+00 L

****

CQUIRE DATE & TIME	: 11-AUG-1998 07:13	* DEADTIME (%)	: 1.23683E-02
RESET LIVE TIME (MIN)	: 0 06:40:00	* SENSITIVITY	: 4.00000
LASPED REAL TIME (MIN)	: 0 06:40:02	* SHAPE PARAMETER	: 5.00000
LAPSED LIVE TIME (MIN)	: 0 06:40:00	* NBR ITERATIONS	: 10

****

ETECTOR	: Detector 4	* LIBRARY	: SEDIMENT
NERGY TOLERANCE	: 1.20 keV	* HALF LIFE RATIO	: 9.00000
CT. CONV. FACTOR	: 1.00000E+06	* ABUNDANCE LIMIT	: 71.0%
EAK START CHANNEL	: 100	* PEAK END CHANNEL	: 4096

****

EFFICIENCY CAL DATE	: 28-JUL-1998 13:15	* EFF FACTOR 1 (G)	: 9.47775E+02
KEV/CHAN (A)	: 5.00020E-01	* EFF FACTOR 2 (H)	: -5.35111E+00
OFFSET (B)	: 1.26470E-01 keV	* EFF FACTOR 3 (J)	: 9.16800E-01
Q COEFFICIENT (C)	: -1.33148E-08	* EFF FACTOR 4 (K)	: 1.36644E-02
FWHM SLOPE (D)	: 3.08246E-02	* EFF FACTOR 5 (L)	: -5.70758E-03
FWHM OFFSET (E)	: 6.18800E-01	* EFF FACTOR 6 (M)	: -5.70758E-03
		* EFF FACTOR 7 (N)	: -2.22683E-02

FOR INFORMATION ONLY

****

ENERGY = B + (A * channel) + C * channel**2

FWHM = E + D * SQRT(energy)

ln(EFF) = H + J*X + K*X**2 + L*X**3 + M*X**4 + N*X**5
where X = ln(G/energy)

****
ANALYSIS : PEAK V16.5, NID V3.1, MINACT V2.5, INTERF/KEY V2.4, WTMEAN/KEY V1.8
****

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	63.37	76	398	0.98	126.49	123	8	93.5		TH-234
1	92.78	245	281	1.20	185.31	164	26	27.1	8.47E+00	TH-234

st-NID Peak Search Report (continued) Page : 2
mple ID : S506A3298 Acquisition date : 11-AUG-1998 07:13:51

:	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
)	185.99	189	259	1.03	371.72	367	10	35.2		RA-226
5	238.67	554	122	0.98	477.08	473	18	10.4	2.90E+00	PB-212
5	241.30	185	167	1.77	482.34	473	18	39.7		PB 214
)	295.13	121	132	0.77	589.99	586	9	38.6		PB 214
)	300.30	46	122	1.12	600.33	597	9	91.4		PB-212
0	338.63	99	84	1.06	676.99	673	7	36.9		AC-228
0	351.92	274	115	1.28	703.57	698	11	19.4		PB 214
0	462.82	44	61	1.36	925.37	921	9	70.5		AC-228
0	477.75	63	65	0.81	955.24	950	10	53.8		BE-7
0	510.71	312	101	1.47	1021.15	1014	15	18.1		ANNIH
0	583.24	154	57	1.47	1166.21	1159	12	25.3		TL-208
0	609.26	184	62	1.07	1218.26	1212	12	22.6		BI-214
1	727.43	38	53	2.30	1454.61	1449	14	89.8	1.48E+00	BI-212
0	911.08	104	20	1.21	1821.93	1816	10	25.4		AC-228
0	969.03	75	20	1.58	1937.84	1933	13	34.8		AC-228
0	1121.01	28	39	0.75	2241.81	2234	12	96.3		BI-214
0	1238.43	22	7	2.29	2476.66	2472	9	59.9		BI-214
0	1460.77	73	10	1.82	2921.40	2916	14	29.8		K-40
0	1630.26	15	3	0.66	3260.41	3254	10	64.9		AC-228

nimum Detectable Activity Report
imple ID : S506A3298 Acquisition date : 11-AUG-1998 07:13:51

ıclide	Bckgnd Sum	Energy (keV)	MDA (PCI/L)
R-51	98.	320.08	3.8841E+01
N-54	55.	834.83	6.8014E+00
O-57	210.	122.06	3.7447E+00
O-58	38.	810.76	5.6068E+00
E-59	23.	1099.22	1.0212E+01
O-60	16.	1173.22	5.0615E+00
N-65	28.	1115.52	1.2527E+01
B-95	46.	765.79	5.8536E+00
R-95	41.	756.72	9.7587E+00
-131	79.	364.48	4.9808E+00
S-134	44.	604.70	4.6550E+00
S-137	49.	661.65	6.1101E+00
A-140	61.	537.32	1.9891E+01
A-140	18.	1596.49	7.6904E+00

REPORT NAME : QA_CHECK (V5.3) PAGE : 1
REPORT DATE : 11-AUG-1998 15:01
OPERATOR : DICORTE_G

SOUTH CAROLINA ELECTRIC AND GAS
V.C. SUMMER NUCLEAR GENERATING STATION

POST NID ANALYSIS REPORT

TITLE : ENV - ALUM SLUDGE POND 6A SAMPLE 5-

SAMPLE No. : S506A3298
SAMPLE TYPE : 1L LIQUID SAMPLE
COUNT TIME : 11-AUG-1998 07:13:51
SAMPLE TIME : 10-AUG-1998 15:20:00
LIBRARY : SEDIMENT

OPERATOR NAME : DICORTE_G
SAMPLE GEOMETRY : 1LML
SAMPLE QUANTITY : 1.06900E+00
DETECTOR : Detector 4

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR PCI/L	COMMENTS
BE-7	477.59	-0.16	7.231E+01	QA Results OK
K-40	1460.81	0.04	2.260E+02	QA Results OK
TL-208	583.14	-0.10	2.600E+01	QA Results OK
BI-212	727.17	-0.26	5.674E+01	QA Results OK
PB-212	238.63	-0.05	7.837E+01	QA Results OK
BI-214	609.31	0.05	5.877E+01	QA Results OK
PB 214	351.92	0.00	6.519E+01	QA Results OK
RA-226	186.21	0.22	3.052E+02	QA Results OK
AC-228	911.07	-0.01	8.045E+01	QA Results OK
ANNIH	511.00	0.29	3.904E+01	QA Results OK
TH-234	63.29	-0.08	2.339E+02	QA Results OK
AVG ENERGY DIFF =		-0.01	1.242E+03	= TOTAL GAMMA ACTIVITY

727.43 KeV Peak was used in identifying 2 isotopes

UNIDENTIFIED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	% ERROR	POTEN. ID

No Unidentified Peaks

REVIEWED BY : W Scott G DATE : 8/11/98

Sample parameters have been modified by the operator
Analysis parameters have been modifed by the operator

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*****************************************
12-AUG-1998 07:08:58.82

SOUTH CAROLINA ELECTRIC & GAS
V.C. SUMMER NUCLEAR STATION
*****************************************

SAMPLE TITLE : ENV - ALUM SLUDGE POND 6A SAMPLE 6-

SAMPLE TIME              : 10-AUG-1998 15:25   * OPERATOR          : DICORTE_G
                                               * SAMPLE GEOMETRY   : 1LML
SAMPLE ID                : S606A3298           * SHELF NUMBER      : 0
REASON FOR ANALYSIS      : Routine             * EFFICIENCY FILE   : 1LML0
TYPE OF SAMPLE           : 1L LIQUID SAMPLE    * SAMPLE QUANTITY   : 1.06900E+00 L
*************************************************************************************

ACQUIRE DATE & TIME      : 11-AUG-1998 15:10   * DEADTIME (%)      : 7.87698E-03
PRESET  LIVE TIME (MIN)  : 0 06:40:00          * SENSITIVITY        : 4.00000
ELASPED REAL TIME (MIN)  : 0 06:40:01          * SHAPE PARAMETER    : 5.00000
ELAPSED LIVE TIME (MIN)  : 0 06:40:00          * NBR ITERATIONS     : 10
*************************************************************************************

DETECTOR                 : Detector 1          * LIBRARY            : SEDIMENT
ENERGY TOLERANCE         : 1.20 keV            * HALF LIFE RATIO    : 9.00000
ACT. CONV. FACTOR        : 1.00000E+06         * ABUNDANCE LIMIT    : 71.0%
PEAK START CHANNEL       :  100                * PEAK END CHANNEL   : 4096

*************************************************************************************

EFFICIENCY CAL DATE      : 29-JUL-1998 09:30   * EFF FACTOR 1 (G)   : 9.47775E+02
KEV/CHAN       (A)       : 5.00335E-01         * EFF FACTOR 2 (H)   : -4.80194E+00
OFFSET         (B)       : -6.79466E-02 keV    * EFF FACTOR 3 (J)   : 8.78326E-01
Q COEFFICIENT  (C)       : -4.27569E-08        * EFF FACTOR 4 (K)   : 1.67295E-02
FWHM SLOPE     (D)       : 3.14379E-02         * EFF FACTOR 5 (L)   : -9.89127E-02
FWHM OFFSET    (E)       : 6.48499E-01         * EFF FACTOR 6 (M)   : -9.89127E-02

                                               * EFF FACTOR 7 (N)   : -3.07513E-02

*************************************************************************************

     ENERGY = B + (A * channel) + C * channel**2

     FWHM = E + D * SQRT(energy)

     ln(EFF) = H + J*X + K*X**2  + L*X**3 + M*X**4 + N*X**5
       where X = ln(G/energy)

*************************************************************************************
ANALYSIS : PEAK V16.5, NID V3.1, MINACT V2.5, INTERF/KEY V2.4, WTMEAN/KEY V1.8
*************************************************************************************
```

FOR INFORMATION ONLY

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	63.02	128	465	0.82	126.09	122	7	58.6		TH-234
1	92.83	341	612	1.42	185.67	165	26	29.7	9.17E+00	TH-234

Sample ID : S606A3298 Acquisition date : 11-AUG-1998 15:10:41

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	185.72	208	519	1.24	371.33	367	10	43.1		RA-226
0	209.66	109	313	1.04	419.18	415	8	59.6		AC-228
4	238.62	1078	209	1.08	477.07	471	19	7.4	6.18E-01	PB-212
4	241.70	241	314	1.67	483.24	471	19	34.7		PB 214
0	278.30	114	255	1.94	556.39	552	12	58.8		TL-208
4	295.21	387	171	1.12	590.18	584	20	14.9	1.66E+00	PB 214
4	300.07	72	163	1.70	599.90	584	20	68.3		PB-212
0	338.48	202	235	1.12	676.69	671	11	32.6		AC-228
0	351.89	576	216	1.18	703.48	698	12	13.2		PB 214
0	487.20	44	104	1.02	973.95	970	9	89.6		PB 214
0	510.95	451	190	2.38	1021.44	1013	17	16.9		ANNIH
0	583.12	308	94	1.42	1165.71	1161	11	16.7		TL-208
0	609.24	406	103	1.54	1217.93	1213	13	14.3		BI-214
1	726.82	68	77	2.26	1452.98	1446	12	58.0	2.35E+00	BI-212
0	911.13	223	39	1.62	1821.45	1815	13	17.7		AC-228
4	964.20	31	78	2.38	1927.56	1919	22	132.6	1.56E+00	BI-214
4	968.87	117	37	1.31	1936.89	1919	22	25.8		AC-228
0	1120.66	61	68	1.51	2240.37	2232	13	61.2		BI-214
0	1237.96	23	48	1.92	2474.91	2467	12	127.5		BI-214
0	1460.65	256	30	1.84	2920.20	2910	17	15.9		K-40
0	1509.53	20	24	3.88	3017.96	3011	13	107.7		BI-214
0	1729.29	29	0	0.65	3457.41	3452	12	37.1		BI-214
0	1764.19	70	27	1.21	3527.22	3521	13	39.7		BI-214

Minimum Detectable Activity Report
Sample ID : S606A3298 Acquisition date : 11-AUG-1998 15:10:41

Nuclide	Bckgnd Sum	Energy (keV)	MDA (PCI/L)
CR-51	176.	320.08	3.3135E+01
MN-54	68.	834.83	4.4171E+00
CO-57	376.	122.06	3.4651E+00
CO-58	66.	810.76	4.2945E+00
FE-59	45.	1099.22	8.2440E+00
CO-60	43.	1173.22	4.6965E+00
ZN-65	44.	1115.52	9.0158E+00
NB-95	87.	765.79	4.7146E+00
ZR-95	72.	756.72	7.5948E+00
I-131	127.	364.48	4.0456E+00
CS-134	105.	604.70	4.2413E+00
CS-137	84.	661.65	4.6924E+00
BA-140	82.	537.32	1.4022E+01
LA-140	25.	1596.49	5.0754E+00

REPORT NAME : QA_CHECK (V5.3) PAGE : 1
REPORT DATE : 12-AUG-1998 07:08
OPERATOR : DICORTE_G

SOUTH CAROLINA ELECTRIC AND GAS
V.C. SUMMER NUCLEAR GENERATING STATION

POST NID ANALYSIS REPORT

TITLE : ENV - ALUM SLUDGE POND 6A SAMPLE 6-

SAMPLE No. : S606A3298
SAMPLE TYPE : 1L LIQUID SAMPLE
COUNT TIME : 11-AUG-1998 15:10:41
SAMPLE TIME : 10-AUG-1998 15:25:00
LIBRARY : SEDIMENT

OPERATOR NAME : DICORTE_G
SAMPLE GEOMETRY : 1LML
SAMPLE QUANTITY : 1.06900E+00
DETECTOR : Detector 1

ISOTOPE	PEAK ENERGY	ENERGY DIFF (KEV)	DECAY CORR PCI/L	COMMENTS
K-40	1460.81	0.16	4.427E+02	QA Results OK
TL-208	583.14	0.02	3.069E+01	QA Results OK
BI-212	727.17	0.35	5.892E+01	QA Results OK
PB-212	238.63	0.01	1.003E+02	QA Results OK
BI-214	609.31	0.07	7.657E+01	QA Results OK
PB 214	351.92	0.03	8.563E+01	QA Results OK
RA-226	186.21	0.49	2.269E+02	QA Results OK
AC-228	911.07	-0.06	9.974E+01	QA Results OK
ANNIH	511.00	0.05	3.390E+01	QA Results OK
TH-234	63.29	0.27	2.638E+02	QA Results OK
AVG ENERGY DIFF =		0.14	1.419E+03 = TOTAL GAMMA ACTIVITY	

726.82 KeV Peak was used in identifying 2 isotopes
964.20 KeV Peak was used in identifying 2 isotopes

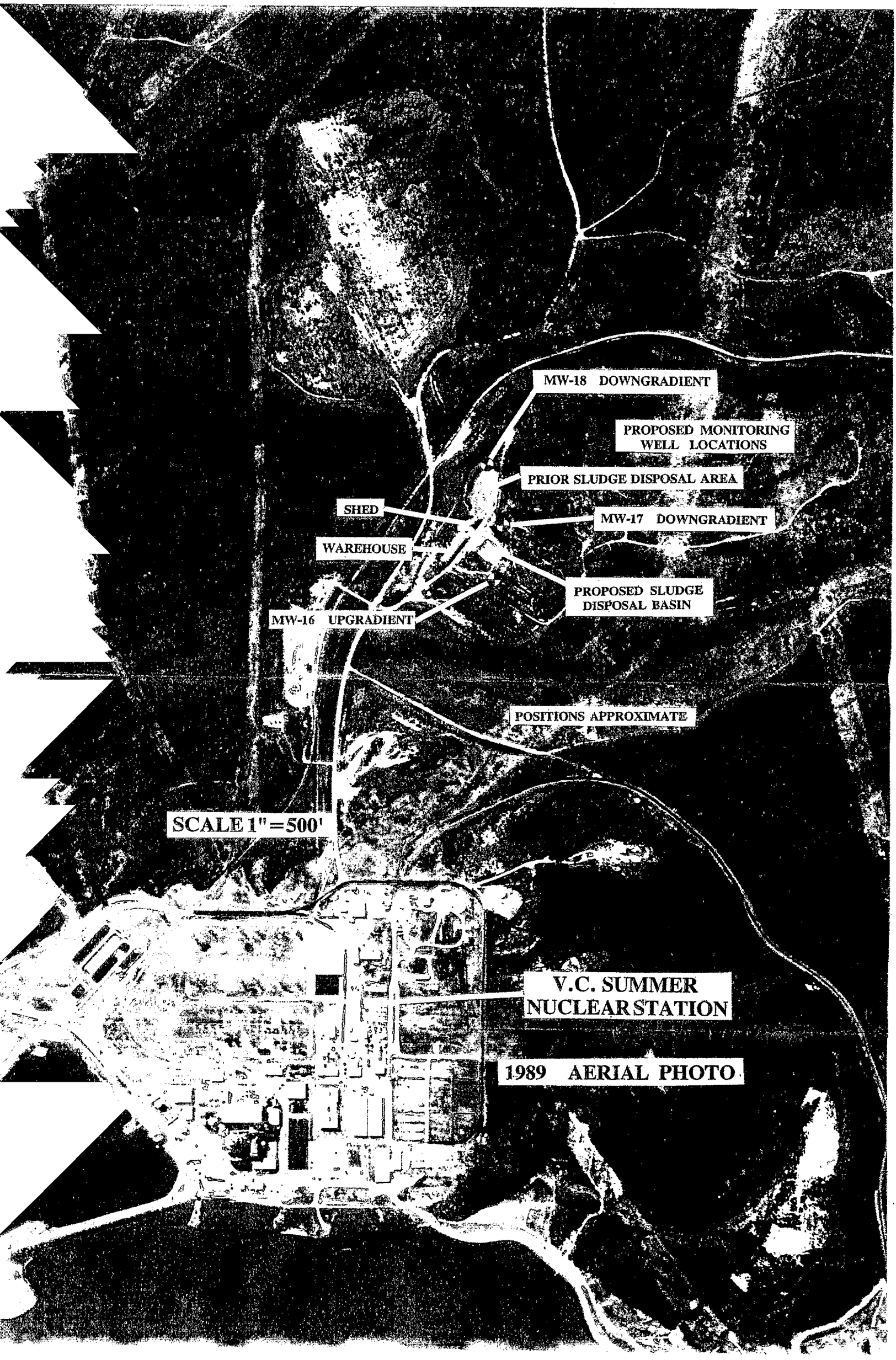
UNIDENTIFIED PEAKS

ENERGY	NET AREA	FWHM	GAMMA/SEC	% ERROR	POTEN. ID

No Unidentified Peaks

REVIEWED BY : W Smith DATE : 8/12/98

Sample parameters have been modified by the operator
Analysis parameters have been modifed by the operator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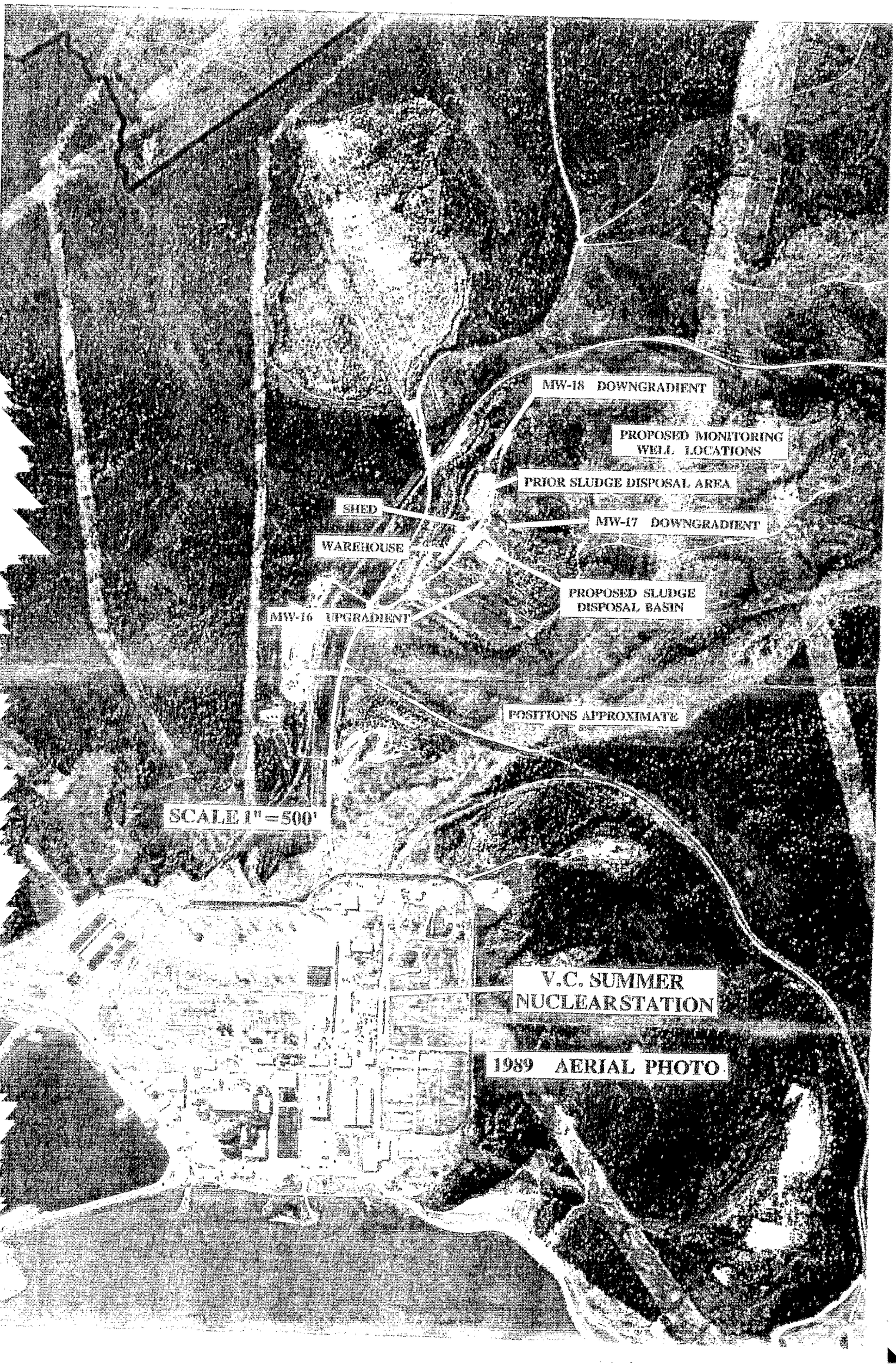
PROPOSED MONITORING WELL LOCATIONS
PRIOR SLUDGE DISPOSAL AREA
SHED
MW-17 DOWNGRADIENT
WAREHOUSE
PROPOSED SLUDGE DISPOSAL BASIN
MW-16 UPGRADIENT
POSITIONS APPROXIMATE
SCALE 1" = 500'
V.C. SUMMER NUCLEAR STATION
1989 AERIAL PHOTO


MW-18 DOWNGRADIENT
PROPOSED MONITORING WELL LOCATIONS
PRIOR SLUDGE DISPOSAL AREA
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MW-17 DOWNGRADIENT
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PROPOSED SLUDGE DISPOSAL BASIN
MW-16 UPGRADIENT
POSITIONS APPROXIMATE
SCALE 1" = 500'
V.C. SUMMER NUCLEARSTATION
1989 AERIAL PHOTO