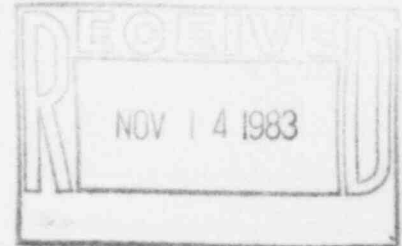


DMB

Omaha Public Power District
1623 Harney Omaha, Nebraska 68102
402/536-4000

November 7, 1983
LIC-83-260

Mr. J. E. Gagliardo, Director
Division of Resident Reactor Project
& Engineering Programs
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011



Reference: Docket No. 50-285

Dear Mr. Gagliardo:

Representative Sampling of
Waste Gas Decay Tanks

At the request of Mr. Blair Nicholas of your office during his inspection of the Fort Calhoun Station's chemistry and health physics program during the week of August 22, 1983, attached are the results of an evaluation of the Fort Calhoun Station's waste gas decay tank (WGDT) sampling capability.

An evaluation of WGDT sampling capability was made on the basis of 28 samples. These samples are divided into three groups. The first group (see Table I) showed a large variation in isotopic concentrations, indicating non-representative sampling. The waste gas sampling panel, WD-32, was investigated and the gas sampling pump was replaced. A special procedure, SP-WDS-16, was then used to sample the WGDT directly at the tank sample isolation valve (Room 16 sample). These results were compared with WD-32 samples (following pump repair), as shown in Table II. All the samples with recirculation times greater than or equal to 10 minutes are at the level of agreement as defined in Inspection Report 50-285/82-21, Attachment 1. The sampling procedure, CMP-2, Appendix A, requires 15 minute recirculation.

The third group of samples is a comparison of sample results obtained by different technicians using WD-32. Table III summarizes the results from four different technicians. All of these results are at the level of agreement as defined by Inspection Report 50-285/82-21, Attachment 1.

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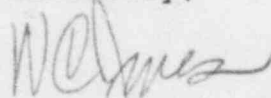
Employment with Equal Opportunity
Male/Female

IE-06
BE-25
11

Mr. J. E. Gagliardo
LIC-83-260
Page Two

The WGD T Release Permits (FC-213) for 1982 were reviewed with respect to possible non-representative sampling. The WD-32 sample pump was working properly for these samples; based on the levels of Xe-133 and Kr-85 observed. The WD-32 sample pump failed during or after the 1983 refueling outage; the exact date cannot be identified since the WGD T activity was low due to reactor shutdown. A flowmeter has been installed in the grab sample piping to verify flow through the sample vessel.

Sincerely,



W. C. Jones
Division Manager
Production Operations

WCJ/JCB:jmm

Attachments

cc: Mr. Blair Nicholas
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

LeBoeuf, Lamb, Leiby & MacRae
1333 New Hampshire Avenue, N.W.
Washington, D.C. 20036

Mr. E. G. Tourigny, Project Manager
Mr. L. A. Yandell, Senior Resident
Inspector

TABLE I

<u>DATE</u>	<u>TIME</u>	<u>WGDT</u>	<u>WD-32</u>	
			Xe-133 (μ ci/cc)	Kr-85 (μ ci/cc)
4-20	1510	C	2.21E-6	3.46E-4
4-20	1730	C	6.5 E-8	9.28E-6
4-20	2105	C	4.3 E-8	6.76E-6
4-20	2240	C	1.32E-7	1.86E-5
4-21	0451	C	6.86E-8	-
4-21	0621	C	-	-
4-21	1758	C	-	-
4-21	1830	C	5.98E-8	-
4-21	1919	C	4.68E-8	-
4-21	2021	C	1.11E-7	-
4-22	0045	C	4.06E-7	1.18E-5

TABLE II

<u>DATE</u>	<u>SAMPLE TIME</u>	<u>WGDT</u>	<u>SAMPLE METHOD</u>	<u>WD-32 RECIRC TIME</u>	<u>XE-133 (μci/cc) DECAY CORRECTED TO 4-27-83, 1200</u>	<u>KR-85 (μci/cc)</u>
4-27-83	1259	C	RM-16	N/A	6.18E-5	1.55E-3
4-27-83	1531	C	Rm-16	N/A	6.17E-5	1.62E-3
4-27-83	1744	C	Rm-16	N/A	6.08E-5	1.60E-3
4-27-83	2041	C	Rm-16	N/A	6.24E-5	1.61E-3
4-29-83	1522	C	WD-32	6	1.00E-4	1.36E-3
4-29-83	1619	C	WD-32	6	5.02E-5	1.21E-3
4-29-83	1755	C	WD-32	12	6.17E-5	1.57E-3
4-29-83	2009	C	WD-32	15	6.21E-5	1.57E-3
4-29-83	2220	C	WD-32	10	6.12E-5	1.56E-3

TABLE III

<u>DATE</u>	<u>TIME</u>	<u>ANALYST</u>	<u>TANK</u>	<u>XE-133 ($\mu\text{ci/cc}$)</u> <u>Decay corrected</u> <u>to 5/13/83, 1200</u>	<u>Kr-85</u> <u>($\mu\text{ci/cc}$)</u>
5-13-83	1910	EC	A	1.99E-2	9.55E-4
5-16-83	1311	JS	A	2.14E-2	1.02E-3
5-16-83	1115	JS	A	2.16E-2	1.00E-3
5-13-83	1641	EC	A	1.93E-2	9.29E-4
5-13-83	1338	SS	A	1.94E-2	9.33E-4
5-13-83	1234	SS	A	1.89E-2	9.41E-4
5-13-83	1034	RH	A	1.92E-2	9.30E-4
5-13-83	1131	RH	A	1.94E-2	8.78E-4

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FC-213
R0 7-15-81
PAGE 1 OF 16

82011

12-8-82

(A3)

FORT CALHOUN STATION UNIT NO. 1
WASTE GAS RELEASE PERMIT

QA Record
PERMANENT RETENTION
Initials: R. Haug Date: 12-8-82

PERMIT NO. 82011
GAS DECAY TANK I.D.: A
DATE OF TANK ISOLATION 300, 11, 18, 1982
DATE/TIME SAMPLED 12, 8, 1982/ 834
DAYS OF TANK ISOLATION 20

ANALYST: HAUG

AUTHORIZATION: Larry R. Peterson
MANAGER-FORT CALHOUN STATION

4 BASIS FOR RELEASE PLANT SHUTDOWN.
WASTE GAS SPACE REQUIRED IN PREPARATION
FOR DEGAS AND COLD SHUTDOWN.

I. RADIOACTIVITY ANALYSIS

A. IODINES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
1-131	21.29E-07	1.0E-10	1.29E+03
1-133	5.90E-08	4.0E-10	1.48E+02
1-135	1.19E-07	1.0E-09	1.19E+02
B. NOBLE GASES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
XE-133	1.73E-03	3.0E-07	5.77E+03
KR-85M	1.36E-07	1.0E-07	1.36E+00
XE-131M	4.95E-04	4.0E-07	1.24E+03
KR-88	2.32E-07	2.0E-08	1.16E+01
XE-133M	5.86E-07	3.0E-07	1.95E+00
XE-135	1.01E-07	1.0E-07	1.01E+00
KR-97	2.05E-07	2.0E-08	1.03E+01
XE-139	7.12E-07	3.0E-08	2.37E+01
KR-95	1.14E-02	3.0E-07	3.80E+04
XE-135M	1.76E-07	3.0E-08	4.20E+00
AR-41	4.09E-09	4.0E-08	1.02E-01

TOT GAS SPEC ACT 1.36E-02 NPCU SUM 4.66E+04

TECH. SPEC. 2.7 (2) H. S 03 UCI/CC IS SATISFIED

✓ SAMPLER IN PLACE PRIOR TO RELEASE

✓ SAMPLED DURING RELEASE AT 1600 12-8-82

50200813
CMP-4.6-2
FC-213
RD 7-15-81
PAGE 1 OF 16

(2)

82010

12-7-82

PORT CALHOUN STATION UNIT NO. 1
WASTE GAS RELEASE PERMIT

QA Record
PERMANENT RETENTION
Initials: HAUG Date: 12-7-82

PERMIT NO. 82010
WAS DECAY TANK I.D.: D
DATE OF TANK ISOLATION: 130,10,30,1982
DATE/TIME SAMPLED: 12, 6, 1982/1250
DAYS OF TANK ISOLATION: 35
ANALYST: HAUG

PROCEDURE
REVISION VERIFICATION

Master Revision No. R-0
Signature: HAUG
Date: 12-7-82

RADIOACTIVITY ANALYSIS

A. IODINES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
I-131	6.25E-08	1.0E-10	6.25E+02
I-133	1.44E-08	4.0E-10	3.60E+01
I-135	1.23E-08	1.0E-09	1.23E+01

B. NOBLE BASES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
XE-133	1.86E-03	3.0E-07	6.20E+03
KR-85M	5.62E-08	1.0E-07	5.62E-01
XE-131M	5.57E-04	4.0E-07	1.39E+03
KR-88	1.52E-07	2.0E-08	7.60E+00
XE-133M	3.26E-07	3.0E-07	1.09E+00
XE-135	1.02E-08	1.0E-07	4.82E-01
KR-87	7.52E-08	2.0E-08	3.76E+00
XE-138	6.00E-08	3.0E-08	2.29E+00
KR-85	1.18E-07	3.0E-07	3.80E+04
XE-135M	1.81E-08	3.0E-08	6.03E-01
AR-41	9.36E-09	4.0E-08	1.09E-01

TOT GAS SPEC ACT 1.38E-02 MPOU SUM 4.63E+04

CH SPEC 2.9 (2) H. 83 UCI/CC IS SATISFIED

✓ SAMPLER IN PLACE PRIOR TO RELEASE

✓ SAMPLED DURING RELEASE AT 2149 12-7-82

QA Record
PERMANENT RETENTION
Initials: *MS* Date: *11/2/82*

FC-213
R0 7-15-81
PAGE 1 OF 16

(26)

82009

11/2/82

FORT CALHOUN STATION UNIT NO. 1
WASTE GAS RELEASE PERMIT

PERMIT NO. 82009
BAS DECAY TANK I.D.: C
DATE OF TANK ISOLATION: 1100.10.29.1982
DATE/TIME SAMPLED: 11. 2.1982/ 840
DAYS OF TANK ISOLATION: 4

ANALYST: CORDS

AUTHORIZATION: *Mr. Tony Datta*
MANAGER-FORT CALHOUN STATION

BASIS FOR RELEASE: *Reviewed For Plant Operations Following Reactor Startup*

PROCEDURE
REVISION VERIFICATION

Master Revision No. *R-0*
Signature: *MS*
Date: *11/2/82*

1. RADIOACTIVITY ANALYSIS

A. IODINES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
I-131	$1.90E-06$	$1.0E-10$	$1.90E+04$
I-133	$2.80E-06$	$4.0E-10$	$7.00E+03$
I-135	$28.11E-05$	$1.0E-09$	$8.11E+04$

B. NOBLE GASES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
XE-133	$1.54E-02$	$3.0E-07$	$5.13E+04$
KR-85M	$2.77E-06$	$1.0E-07$	$2.77E+01$
XE-131M	$7.32E-04$	$4.0E-07$	$1.83E+03$
KR-86	$5.10E-06$	$2.0E-08$	$2.55E+02$
XE-133M	$3.57E-05$	$3.0E-07$	$1.19E+02$
XE-135	$1.89E-06$	$1.0E-07$	$1.89E+01$
KR-87	$3.62E-06$	$2.0E-08$	$1.81E+02$
XE-138	$1.85E-05$	$3.0E-08$	$6.17E+02$
KR-85	$2.24E-03$	$3.0E-07$	$7.47E+03$
XE-135M	$5.18E-06$	$3.0E-08$	$1.73E+02$
AR-41	$2.84E-05$	$4.0E-08$	$7.10E+02$

TOT GAS SPEC ACT $1.85E-02$ MPCU SUM $1.70E+05$

TECH SPEC 2.9 (2) H. ≤ 83 UCI/CC IS SATISFIED

✓ SAMPLER IN PLACE PRIOR TO RELEASE

✓ SAMPLED DURING RELEASE AT *0600 / 11-3-82*

FC-213
RC 7-15-81
PAGE 1 OF 16

(2)

1200 T
10/23/82

FORT CALHOUN STATION UNIT NO. 1
WASTE GAS RELEASE PERMIT

PERMIT NO. 62008
GAS DECAY TANK I.D.: A4
DATE OF TANK ISOLATION: 420. 9.22.1982
DATE/TIME SAMPLED: 10.23.1982/1122
DAYS OF TANK ISOLATION: 31

ANALYST: KERRY

QA Record
PERMANENT RETENTION
Initials: JD Date: 10/23/82

PROCEDURE
REVISION VERIFICATION

Master Revision No. 20
Signature: [Signature]
Date: 10/23/82

I. RADIOACTIVITY ANALYSIS

A. IODINES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
I-131	<u>1.78E-08</u>	1.0E-10	1.78E+02
I-133	<u>9.19E-09</u>	4.0E-10	2.30E+01
I-135	<u>1.04E-08</u>	1.0E-09	1.04E+01

B. NOBLE GASES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
XE-133	<u>5.10E-03</u>	3.0E-07	1.70E+04
KR-85M	<u>6.23E-08</u>	1.0E-07	6.23E-01
XE-131M	<u>3.79E-04</u>	4.0E-07	9.48E+02
KR-88	<u>5.38E-08</u>	2.0E-08	2.69E+00
XE-133M	<u>2.47E-06</u>	3.0E-07	8.23E+00
XE-135	<u>2.02E-08</u>	1.0E-07	2.02E-01
KR-87	<u>3.52E-08</u>	2.0E-08	1.76E+00
XE-138	<u>3.07E-08</u>	3.0E-08	1.02E+00
KR-85	<u>2.02E-03</u>	3.0E-07	6.73E+03
XE-135M	<u>1.15E-08</u>	3.0E-08	3.83E-01
AR-41	<u>3.67E-09</u>	4.0E-08	9.18E-02

TOT GAS SPEC ACT 7.50E-03 MPCU SUM 2.49E+04

TECH SPEC 2.9 (2) H. 3 B3 UCI/CC IS SATISFIED

☒ SAMPLER IN PLACE PRIOR TO RELEASE

☒ SAMPLED DURING RELEASE AT 0400/10-24-82

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FC-213
R0 7-15-81
PAGE 1 OF 16

(23)

82007

9/27/82

A.L.L.

FORT CALHOUN STATION UNIT NO. 1
WASTE GAS RELEASE PERMIT

PERMIT NO. 82007
GAS DECAY TANK I.D.: B
DATE OF TANK ISOLATION: 1120, 7.30.1982
DATE/TIME SAMPLED: 9.27.1982/2023
DAYS OF TANK ISOLATION: 60

ANALYST: LATWATIS

QA Record
PERMANENT RETENTION
Initials: *[Signature]* Date: 9/27/82

PROCEDURE
REVISION VERIFICATION

Master Revision No. 0-0
Signature *[Signature]*
Date 9/27/82

1. RADIOACTIVITY ANALYSIS

A. IODINES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
I-131	$\leq 3.87E-08$	$1.0E-10$	$3.87E+02$
I-133	$\leq 3.18E-08$	$4.0E-10$	$7.95E+01$
I-135	$\leq 8.08E-08$	$1.0E-09$	$8.08E+01$

B. NOBLE GASES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
XE-133	$4.04E-03$	$3.0E-07$	$1.35E+04$
KR-85M	$2.05E-07$	$1.0E-07$	$2.05E+00$
XE-131M	$1.01E-04$	$4.0E-07$	$2.53E+02$
KR-88	$1.10E-07$	$2.0E-08$	$5.90E+08$
XE-133M	$2.68E-05$	$3.0E-07$	$8.93E+01$
XE-135	$3.86E-07$	$1.0E-07$	$3.86E+00$
KR-87	$6.18E-08$	$2.0E-08$	$3.09E+00$
XE-138	$2.28E-07$	$3.0E-08$	$7.60E+00$
KR-85	$9.19E-04$	$3.0E-07$	$3.06E+03$
XE-135M	$7.13E-08$	$3.0E-08$	$2.38E+00$
AR-41	$1.90E-08$	$4.0E-08$	$4.75E-01$

TOT GAS SPEC ACT $3.09E-03$ MPCU SUM $1.74E+04$

TECH SPEC 2.9 (2) H. ≤ 83 UCI/CC IS SATISFIED

☒ SAMPLER IN PLACE PRIOR TO RELEASE

☒ SAMPLED DURING RELEASE AT 1913 / 9-28-82

50200125

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 FC-213
 R0 7-15-81
 PAGE 1 OF 16

(26)

WGT
 8/17/82
 82006

FORT CALHOUN STATION UNIT NO. 1
 WASTE GAS RELEASE PERMIT

PERMIT NO. 82006
 GAS DECAY TANK I.D.: C
 DATE OF TANK ISOLATION: 1321, 6/27/1982
 DATE/TIME SAMPLED: 8,17,1982/1230
 DAYS OF TANK ISOLATION: 50

ANALYST: T. CHRISTENSEN

PROCEDURE
 REVISION VERIFICATION

Master Revision No. 80
 Signature: [Signature]
 Date: 8/17/82

QA Record
 PERMANENT RETENTION
 Initials: [Signature] Date: 8/17/82

X. RADIOACTIVITY ANALYSIS

A. IODINES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
I-131	5.29E-08	1.0E-10	5.29E+02
I-133	4.13E-08	4.0E-10	1.03E+02
I-135	1.15E-07	1.0E-09	1.15E+02

B. NOBLE GASES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
XE-133	2.68E-03	3.0E-07	8.93E+03
KR-85M	1.12E-07	1.0E-07	1.12E+00
XE-131M	4.17E-04	4.0E-07	1.04E+03
KR-88	1.16E-07	2.0E-08	5.80E+00
XE-133M	1.09E-05	3.0E-07	3.63E+01
XE-135	4.42E-08	1.0E-07	4.42E-01
KR-87	8.04E-08	2.0E-08	4.02E+00
XE-138	3.23E-07	3.0E-08	1.08E+01
KR-85	2.11E-03	3.0E-07	7.03E+03
XE-135M	1.05E-07	3.0E-08	3.50E+00
AR-41	1.93E-08	4.0E-08	4.83E-01

TOP GAS SPEC ACT 5.22E-03 MPCU SUM 1.78E+04

TOP SPEC 2.9 (2) H. 1.83 UCI/CC IS SATISFIED

✓ SAMPLER IN PLACE PRIOR TO RELEASE

✓ SAMPLED DURING RELEASE AT 0815 / 8-17-82

QA Record
PERMANENT RETENTION

Initials: JS Date: 7/1/82

CMF-4.6-2
FC-213
R0 7-15-81
PAGE 1 OF 16

82005

7/19/82

(23)

FORT CALHOUN STATION UNIT NO. 1
WASTE GAS RELEASE PERMIT

PERMIT NO. 82005
GAS DECAY TANK I.D.: D
DATE OF TANK ISOLATION: 2135, 6.16.1982
DATE/TIME SAMPLED: 7.19.1982/1325
DAYS OF TANK ISOLATION: 32

ANALYST: LEMON

PROCEDURE
REVISION VERIFICATION

Master Revision No. 00

Signature: Long Lane

Date: 7/21/82

RADIOACTIVITY ANALYSIS

A	IODINES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
	I-131	46.73E-08	1.0E-10	6.73E+02
	I-133	2.24E-08	4.0E-10	5.60E+01
	I-135	5.82E-08	1.0E-09	5.82E+01

B.	NOBLE GASES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
	XE-133	2.12E-04	3.0E-07	7.07E+02
	KR-85M	5.36E-08	1.0E-07	5.36E-01
	XE-131M	2.30E-05	4.0E-07	5.75E+01
	KR-88	1.17E-07	2.0E-08	5.85E+00
	XE-133M	2.95E-07	3.0E-07	9.83E-01
	XE-135	4.57E-08	1.0E-07	4.57E-01
	KR-87	9.99E-08	2.0E-08	5.00E+00
	XE-138	3.53E-07	3.0E-08	1.18E+01
	KR-85	3.40E-03	3.0E-07	1.13E+04
	XE-135M	4.65E-08	3.0E-08	1.55E+00
	AR-41	3.37E-08	4.0E-08	8.43E-01

TOT GAS SPEC ACT 3.64E-03 MPCU SUM 1.29E+04

TECH SPEC 2.9 (2) H. 3 83 UCI/CC IS SATISFIED

☒ SAMPLER IN PLACE PRIOR TO RELEASE

☒ SAMPLED DURING RELEASE AT 1730/1730-82

30800071
FORM 7-15-81
PAGE 1 OF 1

(23)

6/14/82
82004

FORT CALHOUN STATION UNIT NO. 1
WASTE GAS RELEASE PERMIT

PROCEDURE
REVISION VERIFICATION

Master Revision No. 2

Signature *[Signature]*

Date 6/19/82

PERMIT NO. 82004

WASTE GAS DELAY TANK I.D. B

DATE OF TANK ISOLATION: 1715 / 6 / 1982

DATE/TIME SAMPLED: 6/19/1982/1142

DAYS OF TANK ISOLATION: 10

ANALYST: T. CHRISTENSEN

AUTHORIZATION: Gary Peterson Per Telecom
MANAGER-FORT CALHOUN STATION

WASTE GAS RELEASE

1. RADIOACTIVITY ANALYSIS

A. IODINES	CONC. UCI/CC	M.P.C.U. LIMIT	FRACTION OF
		UCI/CC	M.P.C.U.
I-131	1.69E-08	1.0E-10	4.23E+01
I-135	1.66E-08	1.0E-10	2.16E+01

B. NITRILE CASES	CONC. UCI/CC	M.P.C.U. LIMIT	FRACTION OF
		UCI/CC	M.P.C.U.
XE-123	3.35E-08	3.0E-07	4.40E+01
KR-85M	3.82E-08	1.0E-07	3.02E-01
XE-131M	1.77E-08	4.0E-07	4.43E+01
KR-84	1.35E-08	2.0E-08	4.16E+00
XE-133M	2.06E-07	3.0E-07	6.87E-01
XE-135	3.20E-08	1.0E-07	3.28E-01
KR-87	1.32E-08	2.0E-08	3.66E+00
XE-138	2.25E-07	3.0E-08	7.50E+00
KR-85	1.89E-08	2.0E-07	6.27E+03
XE-135M	3.14E-08	3.0E-08	1.91E+00
KR-41	2.61E-08	4.0E-08	6.53E-01

TOT GAS SPEC ACT 1.91E+03 HPCU SUM 6.96E+03

TECH SPEC 2.9 (1) H. 3.0E UCI/CC IS SATISFIED

✓ SAMPLER IN PLACE PRIOR TO RELEASE

✓ SAMPLER DURING RELEASE AT 0400 6-20-82

50209053

FC-213

80 7-15-81

PAGE 1 OF 16

82003

"A" UGOT

(25)

PORT CALHOUN STATION UNIT NO. 1
WASTE GAS RELEASE PERMIT

PERMIT NO. 82003

DAS ISOLATION TANK U.D. A

DAS ISOLATION TANK ISOLATION 11/15/81

DAS ISOLATION TANK ISOLATION 11/15/81

DAS ISOLATION TANK ISOLATION 11/15/81

ANALYST: WAC

QA Record
PERMANENT RETENTION
Initials: *[Signature]* Date: *6/15/82*PROCEDURE
REVISION VERIFICATIONMaster Revision No. *2-0*Signature *[Signature]*Date *6/15/82*

RADIOACTIVITY ANALYSIS

A. IODINES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
I-131	$\leq 3.79E-08$	$1.0E-10$	$3.79E+02$
I-133	$\leq 1.97E-08$	$4.0E-10$	$4.93E+01$
I-135	$\leq 1.15E-07$	$1.0E-09$	$1.15E+02$

B. NOBLE GASES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
XE-133	$\leq 1.02E-07$	$3.0E-07$	$2.27E+02$
KR-85M	$\leq 3.29E-08$	$1.0E-07$	$3.29E+01$
XE-131M	$\leq 5.30E-08$	$4.0E-07$	$6.30E+01$
KR-88	$\leq 3.39E-08$	$2.0E-08$	$3.45E+00$
XE-133M	$\leq 1.07E-07$	$3.0E-07$	$6.23E+01$
XE-135	$\leq 3.04E-08$	$1.0E-07$	$3.04E+01$
KR-87	$\leq 5.91E-08$	$2.0E-08$	$3.46E+00$
XE-130	$\leq 2.52E-07$	$3.0E-08$	$8.40E+00$
KR-85	$\leq 1.39E-08$	$3.0E-07$	$4.63E+02$
XE-135M	$\leq 1.29E-07$	$3.0E-07$	$1.43E+00$
AR-41	$\leq 1.89E-08$	$9.0E-08$	$4.77E+01$

TOT GAS SPEC ACT 1.48E-03 BYCD 004 5.49E+03

TECH SPEC 2.5 UGOT 6-03 UGOT IS SATISFIED

✓ SAMPLER IN PLACE PRIOR TO RELEASE

✓ SAMPLED DURING RELEASE AT 1200 6-16-82

QA Record
PERMANENT DETENTION
Initials: *[Signature]* Date: *5/5/82*

CMP-4.6-2
FC-213
R0 7-15-81
PAGE 1 OF 16

*Waste Gas
Decay Tank*

(25)

82002

5-5-82

FORT CALHOUN STATION UNIT NO. 1
WASTE GAS RELEASE PERMIT

PERMIT NO. 82002
GAS DECAY TANK I.G.: *C*
DATE OF TANK ISOLATION: 1100, 4, 1, 1982
DATE/TIME SAMPLED: 5, 5, 1982/ 825
DAYS OF TANK ISOLATION: 34

ANALYST: GOEBEL

PROCEDURE
REVISION VERIFICATION

Master Revision *[Signature]*
Signature *[Signature]*
Date *5/5/82*

I. RADIOACTIVITY ANALYSIS

A. IODINES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
I-131	$\leq 5.16E-08$	$1.0E-10$	$5.16E+02$
I-133	$\leq 2.85E-08$	$4.0E-10$	$7.13E+01$
I-135	$\leq 6.08E-08$	$1.0E-09$	$6.08E+01$

B. NOBLE GASES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
XE-133	$1.92E-03$	$3.0E-07$	$6.40E+03$
KR-85M	$\leq 4.97E-08$	$1.0E-07$	$4.97E-01$
XE-131M	$1.41E-04$	$4.0E-07$	$3.53E+02$
KR-88	$\leq 8.22E-08$	$2.0E-08$	$4.11E+00$
XE-133M	$2.54E-06$	$3.0E-07$	$8.47E+00$
XE-135	$\leq 3.09E-08$	$1.0E-07$	$3.09E-01$
KR-87	$\leq 7.19E-08$	$2.0E-08$	$3.60E+00$
XE-138	$\leq 2.42E-07$	$3.0E-08$	$8.07E+00$
KR-85	$1.54E-03$	$3.0E-07$	$5.13E+03$
XE-135M	$\leq 5.66E-08$	$3.0E-08$	$1.89E+00$
AR-41	$\leq 4.10E-09$	$4.0E-08$	$1.03E-01$

TOT GAS SPEC ACT $3.60E-03$ MPCU SUM $1.26E+04$

TECH SPEC 2.9 (2) H. ≤ 83 UCI/CC IS SATISFIED

☒ SAMPLER IN PLACE PRIOR TO RELEASE

☒ SAMPLED DURING RELEASE AT *0800, 5-6-82*

020000

'D' WASTE GAS DECAY TANK

QA Record
PERMANENT RETENTION
Initials: AS Date: 4/27/82

CMP-4.6-2
FC-213
R0 7-15-81
PAGE 1 OF 16

#82001
4/27/82

(24)

FORT CALHOUN STATION UNIT NO. 1
WASTE GAS RELEASE PERMIT

PERMIT NO. 82001
GAS DECAY TANK I.D. D
DATE OF TANK ISOLATION 25, 4, 25, 1982
DATE/TIME SAMPLED: 4, 26, 1982/1647
DAYS OF TANK ISOLATION: 1

PROCEDURE
REVISION VERIFICATION
Master Revision No. D-0
Signature J. Kueck
Date 4/27/82

ANALYST ANDERSON

AUTHORIZATION: L.T. Kueck
for MANAGER-FORT CALHOUN STATION

BASIS FOR RELEASE WD-174 "D" WASTE GAS
DECAY TANK MANUAL ISOLATION VALVE, IS LEAKING.
TANK MUST BE EMPTY TO REPAIR VALVE.

C. RADIOACTIVITY ANALYSIS

A. IODINES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
I-131	$\pm 7.04E-08$	$1.0E-10$	$7.04E+02$
I-133	$\pm 5.75E-08$	$4.0E-10$	$1.44E+02$
I-135	$\pm 6.12E-08$	$1.0E-09$	$6.12E+01$
B. NOBLE GASES	CONC. UCI/CC	M.P.C.U. LIMIT UCI/CC	FRACTION OF M.P.C.U.
XE-133	$4.14E-03$	$3.0E-07$	$1.38E+04$
KR-85M	$2.147E-07$	$1.0E-07$	$1.47E+00$
XE-131M	$7.14E-07$	$4.0E-07$	$1.79E+00$
KR-88	$\pm 1.53E-07$	$2.0E-08$	$7.65E+00$
XE-133M	$3.85E-06$	$3.0E-07$	$1.28E+01$
XE-135	$6.10E-03$	$1.0E-07$	$6.10E+01$
KR-87	$\pm 1.22E-07$	$2.0E-08$	$6.10E+00$
XE-138	$\pm 4.46E-07$	$3.0E-08$	$1.49E+01$
KR-85	$3.94E-03$	$3.0E-07$	$1.31E+04$
XE-135M	$1.59E-07$	$3.0E-09$	$5.30E+06$
AR-41	$4.01E-03$	$4.0E-08$	$1.00E+06$

TOT GAS SPEC ACT $9.09E-03$ MPCU SUM $2.79E+04$

TECH SPEC 2.9 (2) H. 3 B3 UCI/CC IS SATISFIED

- ☒ SAMPLER IN PLACE PRIOR TO RELEASE
- ☒ SAMPLER DURING RELEASE AT 2125/4-27-82

① 1510

C' WGD
SANTI

Mar. #7

AUTOMATIC ISOTOPE ANALYSIS

4/20/83 1526

SEC. FILE NO. 73

GAS 15S, RM-017-RM 062, 40000CC, 1300 SEC

SPEC. FILE NO. 7 LABEL 2

THODT C

SUBTRACT BOND 73

COUNT BOND 73

BOND, TAPE, LOADED??

I=

BOND, FILE NO. #175

DATE SAMPLE WAS COLLECTED

NO. 73

DAY 122

YEAR 21723

TIME 21510

SAMPLE VOL. OR WT. 40000 CC

TYPE HEADLINE

C WGD

TYPE CODE (HR LY) TO START 7

SPEC. WRITTEN IN FILE 30 TAPE 127

C WGD

4/20/83 1510

SAMPLE COUNTING DATE 4/20/83 1526

SAMPLE COLLECTION DATE 4/20/83 1510

DECAY TIME 0 DAYS 15 MIN.

ACC. LIVE TIME 30.0 MIN.

SAMPLE VOL./WT. 40000-03 CC/GR

FORM FILE NO. 1

END. CALIB. FILE 1 LAST CALIB. CHECK 4/20/83

REF. FILE NO. 5 4000 CC GAS MARIN

ATA PG. 2RCH. 7-A

NO.	CENTROID	NET INTO	SPEC.	% ERROR	FORM
1	89.2	1540	80	3.1	1.4
2	137.6	92	120	20.4	1.7
3	124.8	60	94	23.3	1.7
4	247.1	66	41	18.5	1.0
5	498.4	32	11	21.7	2.4
6	584.9	47	0	17.1	2.5
7	513.7	1232	2	2.7	2.5

ATA ACT. CALC 7-D

BASIC GAS

WELLING

UCI/CC

ABUNDANCE % RATE (CPM)

% ERR BELT

133 2.21E-06 +/- 0.80E-08

1.00

1.1

KL-130 ***NOT IDENTIFIED***	1.00			
137.5 (3.732E-09)	74.00			
KL-131 ***NOT IDENTIFIED***	1.00			
144.9 (3.18E-09)	2.00			
NR-80 7.72E-09 +/- 2.09E-09	1.14			
156.1 7.92E-09	35.00	2.04	25.3	1.5
KL-133 ***NOT IDENTIFIED***	1.00			
232.9 (3.81E-09)	14.00			
KL-135 ***NOT IDENTIFIED***	1.00			
249.6 (1.27E-09)	92.00			
I-131 ***NOT IDENTIFIED***	1.00			
364.5 (1.17E-09)	22.00			
NR-87 ***NOT IDENTIFIED***	1.00			
403.0 (1.54E-09)	50.00			
KL-138 ***NOT IDENTIFIED***	1.00			
434.4 (1.42E-09)	40.00			
NR-85 3.46E-04 +/- 9.87E-04	1.00			
514.0 3.46E-04	0.40	41.04	2.9	0.7
KL-139 ***NOT IDENTIFIED***	1.00			
522.0 (4.54E-09)	80.00			
I-133 ***NOT IDENTIFIED***	1.00			
529.9 (4.09E-09)	99.00			
I-135 ***NOT IDENTIFIED***	1.00			
7100.5 (1.04E-09)	34.90			
NR-41 ***NOT IDENTIFIED***	1.00			
1293.5 (3.47E-09)	99.00			

UNIDENTIFIED PHOTOPeAKS

ENERGY	RATE(CPM)	% ERR
127.75	2.05	20.4
247.23	2.25	18.5
490.45	1.14	21.9
504.75	1.54	17.1

(2)

1730

D. A. STEVENS (SAM #)

WGDT "C"

MARINELL #8 (SAMPLE)

4/20/83

AUTOMATIC ISOTOPE ANALYSIS

4/20/83 1834

SEL. FILE NO. 1

TO

FX

AUTOMATIC ISOTOPE ANALYSIS

4/20/83 1737

SEL. FILE NO. 73

UON INS. RM5057, RM 042, 4000000-1000 SEC

UPEC. FILE NO. 7 LABEL 7

7NUBI 7

SUBTRACT PUND 77

COUNT PUND. 7N

UOND. TAP. LOADED 77

77

UOND. FILE NO. #7175

NOTE SAMPLE WAS COLLECTED

70. 77

DAY 720

YEAR 71007

TIME 71710

SAMPLE VOL. OR WT. 74000 JCC

TYPE READING

UON. C

77PL. 70N7 (OR LT) TO START 7

UON. WRITTEN IN FILE 1 TAP. 27

WPH. C

4/20/83 1801

SAMPLE COUNTING DATE 4/20/83 1834

WGDT "C"
#8

DAS

WGDT "C"

#8

NOT IDENTIFIED

1230.5

1.420-02

34.90

1.00

NOT IDENTIFIED

1230.5

1.420-02

34.90

1.00

UNIDENTIFIED PHOTOGRAPHS

DATE

TIME (H:M)

% CR

116.25

0.74

27.2

116.25

1.14

27.0

116.25

1.14

27.0

116.25

0.94

24.9

116.25

1.44

19.0

116.25

0.94

21.4

116.25

0.84

24.2

116.25

0.74

27.9

116.25

0.74

27.8

116.25

1.44

18.4

116.25

2.25

14.3

116.25

0.64

22.9

(3) 2105

'C' WADT
STEVENS
4-20-83
#4

AUTOMATIC ISOTOPE ANALYSIS

4/20/83 1011

SLU. FILE NO. 73

WAS FMS-RM-057-01 042-400000-1000 SEC

SPEC. FILE NO. 7 LABEL 7

WASNT C

SUBTRACT BUND. 77

COUNT BUND. 77

TYPE LONG (UN LIT) TO START

DATE SAMPLE WAS COLLECTED

NO. 7

73

73

AUTOMATIC ISOTOPE ANALYSIS

4/20/83 1011

SLU. FILE NO.

73

73

AUTOMATIC ISOTOPE ANALYSIS

4/20/83 1011

SLU. FILE NO.

73

73

AUTOMATIC ISOTOPE ANALYSIS

4/20/83 1011

SLU. FILE NO.

73

WAS FMS-RM-057-01 042-400000-1000 SEC

SPEC. FILE NO. 7 LABEL 7

WASNT C

SUBTRACT BUND. 77

COUNT BUND. 77

BUND. ARE LOADED

12 0

BUND. FILE NO. 73

DATE SAMPLE WAS COLLECTED

NO. 73

73

YEAR 1983

TIME 1105

SAMPLE VOLUME MT. 10000

TYPE BUNDING

WASNT C

TYPE LONG (UN LIT) TO START

DATE WRITTEN IN FILE

1. TAP 1/

(10000 COUNTING DATE 4/20/83 1100
 (SAMPLE COLLECTION DATE 4/20/83 1105
 (ELAPSED TIME 0 DAYS 1 MIN.
 (ACQ. TIME 30-0 MIN.
 (SAMPLE VOLUME 4.00E+03 CC/ON
 (PUMP FLOW ML 1
 (LMS CALIB FILE 1 LAST CALIB. CHIN 4/20/83
 (EFF. FILE NO. 5 4000 CC GAS MARIN
 (070 MM BATH 2-4

NO.	CONTAINER	NET INTG.	BRCD.	% CORCT	FWHM
1	100.0	10	3	10.0	1.6
2	110.0	19	3	11.4	1.7
3	121.0	42	3	12.5	1.7
4	136.0	26	3	13.2	1.7
5	147.0	21	3	14.7	1.7
6	154.0	10	2	15.4	1.7
7	164.0	21	3	16.4	1.8
8	175.0	20	3	17.5	1.9
9	183.0	24	11	18.3	2.8

(ALA OUT PAIR 2-3

(WASTE GAS

PEAK NO.	ENERGY	ABUNDANCE(%)	AREA(1000)	% COR	FWHM(keV)
XL 123	4.27E+00	1.00	1.04	0.5	
91.0	4.23E+00	35.00			
KE 058	4.24E+00	1.00			
149.0	4.24E+00	74.00			
XL 121	4.70E+00	1.00			
143.0	4.70E+00	2.00			
KE 091	4.70E+00	1.00			
194.1	4.70E+00	15.00			
XL 113	5.19E+00	1.00			
222.0	5.19E+00	14.00			
XL 115	5.36E+00	1.00			
249.4	5.36E+00	92.00			
XL 121	5.40E+00	1.00			
249.2	5.40E+00	92.00			
KE 097	5.43E+00	1.00			
260.0	5.43E+00	50.00			
XL 112	5.76E+00	1.00			
234.4	5.76E+00	42.00			
KE 098	5.76E+00	1.00			
234.0	5.76E+00	0.40	0.93	20.8	0.2
XL 118	6.54E+00	1.00			
272.0	6.54E+00	00.00			
XL 123	6.09E+00	1.00			
272.0	6.09E+00	00.00			

11-13 1.04E-08 34.00

11-41 ***NOT IDENTIFIED*** 1.00
1292.4 1.67E-09 22.00

UNIDENTIFIED PHOTOPEAKS

ENERGY	RATE(CPM)	% CRR
130.28	1.34	0.01
132.25	1.44	0.01
134.14	1.26	0.01
142.75	0.74	0.01
156.04	1.04	0.01
246.64	0.74	0.01
279.18	0.64	0.01

(SAM #3)

D. A. STEVENS

4/20/83

MARINELLI #8

(4) 2240

XX 0010 CTRN. 7-E

AUTOMATIC ISOTOPE ANALYSIS

4/20/83 2244

SEC. FILE NO. 73

DAY 140, RM-057, RM 062, 4000000, 1000 SEC

SPEC. FILE NO. 7 LABEL 7

MODE 1

SUBTRACT BOND VY

COUNT BOND, TY

(TYPE BOND (OR LT) TO START ?

(WILL SAMPLE NOW COLLECTED

NU. 7

73

73

AUTOMATIC ISOTOPE ANALYSIS

4/20/83 2242

SEC. FILE NO. 73

DAY 140, RM-057, RM 062, 4000000, 1000 SEC

SPEC. FILE NO. 7 LABEL 7

MODE 1

SUBTRACT BOND VY

COUNT BOND, VY

COUNT TAPE LOADED VY

73

BOND, FILE NO. 73

DATE SAMPLE NOW COLLECTED

NU. 74

DAY 220

YEAR 78919003

TIME 72240

SAMPLE VOL (OR WT. 74000 700

TYPE HEADING

MODE 1

(TYPE BOND (OR LT) TO START ?

SPEC. WRITTEN IN FILE 4 TAPE 22

MODE 1

4/20/83 2244

SAMPLE COUNTING DATE 4/20/83 2244

SAMPLE COLLECTION DATE 4/20/83 2240

DECAY TIME 0 DAYS 4 MIN.

ACT. LIVE TIME 20.0 MIN.

SAMPLE VOL (WT. 4.00E+03 GRAM

FILE NO. 1

LAST CALIB. CHECK 4/20/83

FILE NO. 5 4000 CC OLD MARIN

FILE NO. 7-A

1	91.9	23	1	11.2	1.2
2	235.1	20	0	10.0	1.8
3	274.2	21	5	27.1	1.9
4	309.1	19	1	24.7	2.2
5	513.9	66	1	12.7	2.5
6	554.6	17	0	24.3	2.5
7	604.9	17	1	24.2	2.6

ALIA ACT, CALC 7-2

WAS: E GAS

NUCLIDE	ECI/CC	DECAY CORR.	ABUNDANCE(X)	RATE(CPM)	% ERR	DELTA-E
ENERGY						
XE-133	1.32E-07 +/- 1.48E-08	1.00				
91.0	1.32E-07		35.00	3.14	11.2	0.2
SR-90M ***NOT IDENTIFIED***		1.00				
142.5	($< 4.45E-09$)		74.00			
XL-131M ***NOT IDENTIFIED***		1.00				
153.2	($< 9.45E-09$)		2.00			
SR-90 ***NOT IDENTIFIED***		1.00				
194.1	($< 8.44E-09$)		35.00			
XL-133M ***NOT IDENTIFIED***		1.00				
222.0	($< 1.86E-08$)		14.00			
XL-135 ***NOT IDENTIFIED***		1.00				
249.6	($< 3.08E-09$)		22.00			
I-121 ***NOT IDENTIFIED***		1.00				
244.5	($< 3.04E-09$)		22.00			
SR-97 ***NOT IDENTIFIED***		1.00				
403.0	($< 7.27E-09$)		50.00			
XL-132 ***NOT IDENTIFIED***		1.00				
434.4	($< 9.23E-09$)		40.00			
SR-98	1.86E-05 +/- 2.35E-04	1.00				
514.0	1.86E-05		0.40	2.24	12.7	0.2
XL-135M ***NOT IDENTIFIED***		1.00				
527.0	($< 4.97E-09$)		20.00			
I-131 ***NOT IDENTIFIED***		1.00				
529.9	($< 4.46E-09$)		29.00			
SR-95 ***NOT IDENTIFIED***		1.00				
1260.5	($< 1.26E-09$)		34.00			
SR-41 ***NOT IDENTIFIED***		1.00				
1392.3	($< 4.47E-09$)		20.00			

UNIDENTIFIED PHOTOPEAKS

ENERGY	RATE(CPM)	% ERR
305.23	0.64	30.0
306.45	0.74	27.1
306.18	0.64	24.7

R. Haug

(5) 0451

C' WGDJ

4-21-83

#1

WASLE BAS

NUCLIDE ENERGY	UCI/CC	DECAY CORR. ABUNDANCE(%)	RATE(CPM)	% ERR	DELTA-E
-------------------	--------	-----------------------------	-----------	-------	---------

YL-133	6.84E-02 +/- 1.37E-02	1.00			
91.0	2.04E-02	35.00	1.63	20.0	0.3

KR-95M ***NOT IDENTIFIED***		1.00			
149.5	< 4.45E-02	74.00			

XL-131M ***NOT IDENTIFIED***		1.00			
163.9	< 1.35E-02	2.00			

KR-92 ***NOT IDENTIFIED***		1.00			
196.1	< 7.14E-02	35.00			

XL-137M ***NOT IDENTIFIED***		1.00			
232.0	< 2.11E-02	14.00			

YE-135 ***NOT IDENTIFIED***		1.00			
247.1	< 4.81E-02	92.00			

I-131	1.34E-02 +/- 4.97E-02	1.00			
364.5	1.84E-02	92.00	0.73	27.0	-0.1

KR-87 ***NOT IDENTIFIED***		1.00			
403.0	< 6.12E-02	50.00			

YE-139 ***NOT IDENTIFIED***		1.00			
414.4	< 7.10E-02	40.00			

KR-95 ***NOT IDENTIFIED***		1.00			
514.0	< 1.03E-04	0.40			

XL-135M ***NOT IDENTIFIED***		1.00			
527.0	< 2.90E-02	80.00			

I-132 ***NOT IDENTIFIED***		1.00			
529.9	< 2.68E-02	29.00			

I-135 ***NOT IDENTIFIED***		1.00			
1260.5	< 6.81E-02	34.90			

AK-41 ***NOT IDENTIFIED***		1.00			
1293.4	< 2.41E-02	92.00			

UNIDENTIFIED PHOTOPEAKS

ENERGY	RATE(CPM)	% ERR
173.44	1.25	20.0
178.03	1.04	23.0
295.15	1.14	23.5
333.04	1.14	24.0

(6) 0621

'C' WQDT
4-21-83
#2
R Haug

XX DATA CTRL. PCM. 7-2

AUTOMATIC ISOTOPE ANALYSIS

4/21/83 370

SEQ. FILE NO. 73

GAS IKS-RM-057-RM 042-400000-1000 SEC

SPEC. FILE NO. 7 LABEL 7

7

SUBTRACT BOND TY

COUNT BOND TY

TYPE CORR (ON LT) TO START

DATE SAMPLE WAS COLLECTED

MO. 7

CD

WE F

AUTOMATIC ISOTOPE ANALYSIS

4/21/83 300

SEQ. FILE NO. 73

GAS IKS-RM-057-RM 042-400000-1000 SEC

SPEC. FILE NO. 7 LABEL 7

7C WQDT RUN

SUBTRACT BOND TY

COUNT BOND TY

BOND TAPE LOADED TY

1= 0

BOND FILE NO. 7175

DATE SAMPLE WAS COLLECTED

MO. 74

DAY 701

YEAR 1983

TIME 70421

SAMPLE VOL. OR UT. 74000 YOK

TYPE HEADING

C WQDT RCH SAMPLE 2 4-21-83

TYPE CORR (ON LT) TO START

SPEC. WRITTEN IN FILE 17 TAPE 27

C WQDT RCH SAMPLE 2 4-21-83

4/21/83 453

SAMPLE COUNTING DATE 4/21/83 431

SAMPLE COLLECTION DATE 4/21/83 421

C' WQDT
4-21-83
#2

DECAY TIME 0 DAYS 2 MIN.
COR. LIVE TIME 30.3 MIN.
SAMPLE VOL./WT. 4.00E+03 CC/GR
FNUM FILE NO. 1
LNC. CALIB. FILE 1 LAST CALIB. CHECK 4/20/83
EST. FILE NO. 5 4000 CC GAS MARGIN
AIA PK. USCH. 7-A

NO.	CENTROID	NET INTG.	PRCP.	ERR	FNUM
1	143.5	25	0	1.7	1.7
2	153.5	21	0	1.7	1.7
3	172.2	19	0	1.7	1.7
4	140.1	19	1	2.1	2.1

AIA ACT. CALC 7-B

WASTE GAS

NUCLIDE	UCI/CC	DECAY CORR.	ABUNDANCE(%)	RATE(CPM)	% ERR	DELTA-L
XL-133 ***NOT IDENTIFIED***				1.00		
U1.0	(4.941E-09)		35.00			
KR-85M ***NOT IDENTIFIED***				1.00		
149.5	(4.245E-09)		74.00			
XL-131 ***NOT IDENTIFIED***				1.00		
143.7	(4.730E-09)		2.00			
KR-88 ***NOT IDENTIFIED***				1.00		
194.1	(9.74E-09)		35.00			
XL-133M ***NOT IDENTIFIED***				1.00		
222.0	(1.62E-09)		14.00			
XL-135 ***NOT IDENTIFIED***				1.00		
249.4	(2.57E-09)		92.00			
I-131 ***NOT IDENTIFIED***				1.00		
364.5	(3.46E-09)		82.00			
KR-92 ***NOT IDENTIFIED***				1.00		
404.0	(4.13E-09)		50.00			
YE-139 ***NOT IDENTIFIED***				1.00		
524.4	(4.49E-09)		40.00			
KR-93 ***NOT IDENTIFIED***				1.00		
514.0	(4.61E-09)		0.40			
XL-135M ***NOT IDENTIFIED***				1.00		
527.0	(3.64E-09)		89.00			
132 ***NOT IDENTIFIED***				1.00		
529.0	(2.42E-09)		59.00			

C'WGDT

4-21-83

#2

1-135 ***NOT IDENTIFIED***

1260.5

(C 2.10E-07)

14.90

1.00

1-135 ***NOT IDENTIFIED***

1260.5

(C 2.10E-07)

99.90

1.00

UNIDENTIFIED PHOTOPEAKS

ENERGY

RATE/CPM

Z ERR

143.64

0.84

19.6

153.64

0.74

21.8

163.64

0.64

22.9

173.64

0.64

25.9

CSP-4,60-2

FC-364

RI 2-23-83

WGL-BONDTYPE ANALYSIS REPORT

Date: 4-21-83

Sample Point/ Valve No.	Time/ Date	Analysis	Results	Units	WGL Analysis
WD-32 C' WGDT	4-21-83	Isotopic's	Attached		

REMARKS: (Reason for Sample) NRC - AuditAnalyst: R Haug, J Sante**ISSUED**

FEB 23 1983

C'WGDT

4-21-83

#1

AUTOMATIC ISOTOPE ANALYSIS

4/21/83 1757

SEQ. FILE NO. 71

GAS INLET-PM-057-PM GAS, 400000, 1000 SEC

SPEC. FILE NO. 9 LABEL "

7E WNDI

SUBTRACT BOND PV

COUNT BOND PV

BOND TAPE LOADED??

I= 0

BOND FILE NO. 4-175

DATE SAMPLE WAS COLLECTED

MO. 74

DAY 21

YEAR 71703

TIME 71703

SAMPLE VOL. OR WT. 74000 SEC

TYPE HEADING

C WNDI

TYPE (OR) (USE LT) TO START ?

SPEC. WRITTEN IN FILE 20 TAPE 27

C WNDI

4/21/83 1829

SAMPLE COUNTING DATE 4/21/83 1758

SAMPLE COLLECTION DATE 4/21/83 1752

DECAY TIME 0 DAYS 5 MIN.

SEC. LIVE TIME 30.0 MIN.

SAMPLE VOL./WT. 4.00E+03 CC/GR

PUMP FILE NO. 1

LMB. CALIB. FILE 1 LAST CALIB. CHECK 4/20/83

OFF FILE NO. 2 4000 CC GAS MODIN

GAS INLET, 9000, 2-4

ADJ. CENTROID NET INTG. BKGD. % ERROR CORR

1	102.4	19	4	20.2	1.7
2	163.8	12	0	20.9	1.7
3	109.0	29	0	10.3	1.7
4	001.1	25	0	22.0	1.7
5	001.7	10	1	25.8	2.1

GAS MOD. CORR 2.0

'C' WGD
4-21-83
#1

NR-05 WWWDT IDENTIFIED** 1.00
514.0 < 1.055-04 0.40

ME-12SM**WNT IDENTIFIED** 1.00
527.0 5.27E-07 00.00

1-127 ***** IDENTIFIED ***** 1.00
528.0 4.72E-09 99.00

1-135 ***NOT IDENTIFIED*** 1.00
1260.5 1.205-00 34.90

UNIDENTIFIED PHOTOGRAPHS

C' WQDT

4-21-83

#2

X 0

EX GATA CTRL. MEM. 7-B

AUTOMATIC ISOTOPE ANALYSIS

4/21/83 1935

SEG. FILE NO. 716

WATERGATE REENTER NO.

SLW. FILE NO. 71

GAS PKG. SN-957, RN 042, 4000CC, 1800 SEC

SPEC. FILE NO. 7 LABEL 7

7E WQDT

SUBTRACT. BOND 71

COUNT BOND 71

BOND. TAPE LOADED 71

2= 0

BOND. FILE NO. 7172

DATE SAMPLE WAS COLLECTED

MO. 28

DAY 731

YEAR 71722

TIME 718 0

SAMPLE VOL. 100 RT. 74000 YOC

TYPE BEARING

C WQDT

TYPE CODE (OR L7) TO START 7

SPEC. WHICH IN FILE 21 TAPE 27

C WQDT

4/21/83 1906

SAMPLE COUNTING DATE 4/21/83 1936

SAMPLE COLLECTION DATE 4/21/83 1930

DECAY TIME 0 DAYS 6 MIN.

ACC. LIVE TIME 30.0 MIN.

SAMPLE VOL./WT. 4.000103 CC/GR

FILE NO. 1

LAB. CALIB. FILE 1 LAST CALIB. CHECK 4/20/83

OFF FILE NO. 5 4000 CC GAS MARIN

AIS PK. SRCH. 7-A

NO CENTROID NET INTG. SECU. % ERROR EVNM

1	807.9	41	12	19.0	1.4
2	119.3	27	4	21.4	1.7
3	121.0	31	9	22.9	1.7
4	121.8	41	3	17.7	1.7
5	101.4	36	3	16.7	1.7
6	208.7	28	8	19.9	1.7
7	207.8	27	14	27.3	1.9
8	307.9	22	6	27.1	2.3
9	404.1	10	7	22.1	2.3

'C' W GDT
4-21-83
2

10 591.7 24 5 24.7 2.1
ALA ACT. CALC Z-D

WASTE GAS

MUCLIDE	UCI/CC	NUCLIDE CORR.	ABUNDANCE(%)	RATE(CPM)	% ERR	DELTA-S
---------	--------	---------------	--------------	-----------	-------	---------

XE-133	5.93E-08 +/- 1.13E-08			1.00		
51.0	5.93E-08		35.00	1.43	19.0	0.2

KR-95M ***NOT IDENTIFIED***		1.00				
147.5	< 3.07E-09		74.00			

XL-131M ***NOT IDENTIFIED***		1.00				
163.0	< 1.13E-07		2.00			

KR-90 ***NOT IDENTIFIED***		1.00				
176.1	< 3.09E-09		35.00			

XL-133M ***NOT IDENTIFIED***		1.00				
232.0	< 3.35E-08		14.00			

XE-135 ***NOT IDENTIFIED***		1.00				
249.0	< 3.45E-09		92.00			

I-131 ***NOT IDENTIFIED***		1.00				
364.5	< 4.01E-09		82.00			

KR-97 ***NOT IDENTIFIED***		1.00				
403.0	< 5.43E-09		50.00			

XE-139 ***NOT IDENTIFIED***		1.00				
434.4	< 1.13E-08		48.00			

KR-95 ***NOT IDENTIFIED***		1.00				
514.0	< 1.42E-04		0.40			

XL-135M ***NOT IDENTIFIED***		1.00				
527.0	< 5.25E-07		90.00			

I-132 ***NOT IDENTIFIED***		1.00				
529.2	< 4.30E-09		87.00			

I-135 ***NOT IDENTIFIED***		1.00				
1260.5	< 1.43E-08		34.90			

KR-91 ***NOT IDENTIFIED***		1.00				
1273.6	< 5.05E-07		97.00			

UNIDENTIFIED PHOTOPEAKS

ENERGY	RATE(CPM)	% ERR
--------	-----------	-------

1101.75	0.94	31.2
119.25	1.04	22.7
1321.05	1.34	17.2

C' W GDT
4-21-83
#3

* 0010 CTR. TRM. 7-D

AUTOMATIC ISOTOPE ANALYSIS

4/21/83 1983

SEQ. FILE NO. 73

GAS INLET RM-013-RM 042-400000-1000 100

SPEC. FILE NO. 7 LABFL 7

TO RUN

SUBTRACT REND 77

COUNT REND 7N

COND. TAPE LOADED 77

1= 0

COND. FILE NO. = 7175

DATE SAMPLE WAS COLLECTED

NO. 74

DAY 721

YEAR 71993

TIME 71919

SAMPLE VOL CC WT. 4000 100

TYPE HEADLINE

C UNIT

TYPE CORR (00 LYS TO START

SPEC. WRITING IN FILE 22 TAPE 27

C W GDT

4/21/83 1983

SAMPLE COUNTING DATE 4/21/83 1983

SAMPLE COLLECTION DATE 4/21/83 1983

DECAY TIME 0 DAYS 0 MIN.

ACC. LIVE TIME 30.0 MIN.

SAMPLE VOL./WT. 4.000+03 CC/GR

COND. FILE NO. 1

END. CALIB. FILE 1 LAST CALIB. CHECK 4/20/83

FILE NO. 5 4000 CC GAS MARIN

010 PM. 00CH. 7-A

NO.	CENTROID	NET INTG.	DEGR.	3 ERROR	FWHM
1	72.5	30	4	27.2	1.6
2	71.0	18	41	22.3	1.6
3	175.0	30	10	27.9	1.7
4	192.0	26	41	24.7	1.7
5	200.0	27	1	21.5	1.7
6	318.0	14	2	20.7	1.8
7	327.0	14	0	20.7	1.8
8	424.0	17	0	24.2	2.0

ALA-RT. CASE 7-D

00000000

'C' WQDT
4-21-83
#3

NUCLIDE	ENERGY	WGT/CC	ABUNDANCE(%)	DETAILED CORR. RATE(CPM)	N ERR	DELTA-E
YR-113	4.48E-09	1/- 1.04E-09	1.00	1.13	22.3	0.0
	91.0	4.48E-09	12.00			
KR-98	***NOT IDENTIFIED***		1.00			
	149.1	1.76E-09	14.00			
XL-131	***NOT IDENTIFIED***		1.00			
	143.9	9.07E-09	2.00			
KR-99	***NOT IDENTIFIED***		1.00			
	194.1	5.17E-09	18.00			
YR-133	***NOT IDENTIFIED***		1.00			
	232.0	1.34E-09	14.00			
YR-135	***NOT IDENTIFIED***		1.00			
	249.1	2.11E-09	92.00			
I-131	***NOT IDENTIFIED***		1.00			
	364.5	4.71E-09	92.00			
KR-97	***NOT IDENTIFIED***		1.00			
	403.0	3.66E-09	50.00			
YR-119	***NOT IDENTIFIED***		1.00			
	434.4	1.91E-09	40.00			
KR-95	***NOT IDENTIFIED***		1.00			
	514.0	1.73E-09	0.40			
XL-135	***NOT IDENTIFIED***		1.00			
	527.0	3.35E-09	80.00			
I-132	***NOT IDENTIFIED***		1.00			
	529.0	3.17E-09	99.00			
I-135	***NOT IDENTIFIED***		1.00			
	1260.5	2.14E-09	34.90			
KR-91	***NOT IDENTIFIED***		1.00			
	1293.6	2.84E-09	69.00			
UNIDENTIFIED PHOTOPEAKS						

ENERGY	RATE(CPM)	WGT/CC
74.55	0.64	17.2
175.04	1.04	17.2
196.05	1.23	24.7
200.94	0.94	22.3
219.15	0.44	22.7
229.14	0.44	24.7
234.64	0.54	24.2

C'WGDT
4-21-83
#4

8	149.0	19	0	20.1	1.7
9	154.2	22	1	23.0	1.7
10	159.4	19	0	24.3	1.7
11	173.5	17	0	27.8	1.7
12	197.4	27	11	25.3	1.7
13	201.4	19	8	22.3	1.7
14	208.0	25	0	20.0	1.7
15	236.6	15	2	22.3	1.9
16	173.9	15	2	22.1	2.2
17	199.4	17	0	24.3	2.2
18	194.4	15	0	25.3	2.3
19	207.2	19	0	22.0	2.2

SIA ACT. CELL 7-2

WASTE GAS

NUCLIDE ENERGY	UCI/CC	DECAY CORR. ABUNDANCE(%)	RATE(CPM)	% ERR	DELTA-E
KL-113 113.0	1.11E-07 (1.154E-08)	35.00	1.00	2.64	13.0
KL-113 113.0	1.11E-07	35.00	1.00	2.64	13.0
KL-113 113.0	7.30E-09 (7.14E-09)	74.00	1.04	0.54	29.0
KL-113 113.0	7.30E-09	74.00	1.04	0.54	29.0
KL-113 ***NOT IDENTIFIED***		2.00	1.00		
KL-113 113.0	(1.03E-08)	2.00	1.00		
KL-113 ***NOT IDENTIFIED***		35.00	1.00		
KL-113 113.0	(1.09E-09)	35.00	1.00		
KL-113 ***NOT IDENTIFIED***		14.00	1.00		
KL-113 113.0	(1.46E-08)	14.00	1.00		
KL-113 ***NOT IDENTIFIED***		92.00	1.00		
KL-113 113.0	(4.19E-09)	92.00	1.00		
KL-113 ***NOT IDENTIFIED***		82.00	1.00		
KL-113 113.0	(2.91E-09)	82.00	1.00		
KL-113 ***NOT IDENTIFIED***		50.00	1.00		
KL-113 113.0	(7.50E-09)	50.00	1.00		
KL-113 ***NOT IDENTIFIED***		40.00	1.00		
KL-113 113.0	(5.44E-09)	40.00	1.00		
KL-113 ***NOT IDENTIFIED***		0.40	1.00		
KL-113 113.0	(0.27E-07)	0.40	1.00		
KL-113 ***NOT IDENTIFIED***		80.00	1.00		
KL-113 113.0	(2.26E-09)	80.00	1.00		
KL-113 ***NOT IDENTIFIED***		89.00	1.00		
KL-113 113.0	(2.93E-09)	89.00	1.00		
KL-113 ***NOT IDENTIFIED***		34.00	1.00		
KL-113 113.0	(7.40E-09)	34.00	1.00		

C' WQDT

4-21-83

#4

AR-41. ***NOT IDENTIFIED***

1.00

1293.6

< 2.640-09

99.00

UNIDENTIFIED PHOTOPLANS

ENERGY	RATE(CPM)	% CRR
94.55	0.54	23.2
99.75	0.54	23.0
101.95	0.54	24.2
103.25	0.54	20.0
111.05	1.04	10.2
130.25	1.04	24.9
154.15	0.54	21.7
159.44	0.54	24.5
172.54	0.54	23.0
187.64	0.54	21.3
201.54	0.54	23.9
209.14	0.54	23.0
235.75	0.54	23.3
272.95	0.54	21.1
307.45	0.54	22.2
394.45	0.54	22.5
407.25	0.54	21.9

C' W G D T
4-22-83
#5

74 DATA CTRL. PCH, 7-D

AUTOMATIC ISOTOPE ANALYSIS

4/21/83 2050

SEM. FILE NO. 73

GAS INO-RM-057-RM 0&2.400000-1000 SEC

SPEC. FILE NO. ? LABEL ?

?

SUBTRACT BOND TY

COUNT BOND TY

TYPE CORR (OR LT) TO START ?

DATE SAMPLE WAS COLLECTED

LI HU. ?

CD

WE F

AUTOMATIC ISOTOPE ANALYSIS

4/21/83 2132

SEM. FILE NO. 73

GAS INO-RM-057-RM 0&2.400000-1000 SEC

SPEC. FILE NO. ? LABEL ?

TC WGT

SUBTRACT BOND TY

COUNT BOND TY

CMD. TAPE LOADED TY

Is A

BOND FILE NO. #7175

DATE SAMPLE WAS COLLECTED

MU. Y3

DAY 732

YEAR 71983

TIME 90045

SAMPLE VOL. 00 WT. 74000 CU. YCC

TYPE HEADING

C WGT 4-22-83

TYPE CORR (OR LT) TO START ?

SPEC. WRITTEN IN FILE 24 TAPE 27

C WGT 4-22-83

4/22/83 719

SAMPLE COUNTING DATE 4/22/83 49

SAMPLE COLLECTION DATE 4/22/83 49

BLANK TIME 0 DAYS 4 MIN

ACQ. LIVE TIME 10.0 MIN

SAMPLE VOL. 00 WT. 4.000-01 G/GRN

SEM FILE NO.

C' WGD
4-22-83
#5

529.9 6.30E-09 29.00

1-135 ***NOT IDENTIFIED*** 1.00
1240.1 1.49E-09 24.90

AP-41 ***NOT IDENTIFIED*** 1.00
293.1 5.29E-09 29.00

UNIDENTIFIED PHOTOPeAKS

ENERGY	RATE(CPM)	Z CRP
193.44	0.94	24.0
209.94	0.74	23.7
214.34	1.04	19.3
349.45	1.14	16.9
381.54	0.44	20.9
454.34	0.54	20.9
679.05	0.44	27.7

WGDT 'C'

①
Purge Time = 45 min

5.0 scf

4/27/93

AUTOMATIC ISOTOPE ANALYSIS

FILE NO.

DATE: 04-27-93 09:00:00 1000 SEC

SPEC: FILE NO. LABEL

AMOUNT: 5.0

SAMPLE: 000000

COUNT: 0000

FILE: 000000 000000 000000

DATE: 04-27-93 09:00:00

FILE NO.

AUTOMATIC ISOTOPE ANALYSIS

FILE NO.

DATE: 04-27-93 09:00:00 1000 SEC

SPEC: FILE NO. LABEL

AMOUNT: 5.0

SAMPLE: 000000

COUNT: 0000

FILE: 000000 000000 000000

DATE: 04-27-93 09:00:00

FILE NO.

DATE: 04-27-93 09:00:00

FILE NO.

DATE: 04-27-93 09:00:00

FILE NO.

DATE: 04-27-93 09:00:00

FILE NO. 000000 000000 000000

DATE: 04-27-93 09:00:00

FILE NO. 000000 000000 000000

DATE: 04-27-93 09:00:00

FILE NO. 000000 000000 000000

DATE: 04-27-93 09:00:00

WGDT 'C' (

Purge Time = 45 min (

5.0 scf

4/27/83 (

WGDT 1

APR 27 1983

1334

SAMPLE COUNTING DATE 4/27/83 1334

SAMPLE COLLECTION DATE 4/27/83 1334

DELAY TIME 0 DAYS 7 MIN.

ACC. LIVE TIME 30.0 MIN.

SAMPLE VOL./WT. 4.000/03 CC/CC

CHIM FILE NO

CHIM. CALIB. FILE 1 LAST CALIB. DATE 4/27/83

REF. FILE NO. 2 4000 CC GAS METER

AIR PR. SRCH. 7-4

CHIM. CONTROLLED NET INFO. DRCD. N. L. OF CHIM

1 90.0 43050 400 7.0 1.0

2 175.0 191 112 12.0 1.0

3 311.0 2512 222 1.0 2.0

4 700.1 18 0 1.0 1.0

ALL ACT. CALS 7-2

WASTE GAS

NUCLIDE UCI/CC DECD. CHIM. ABUNDANCE(%) RATIO(CHIM) X ERR. DELTA-E

ME-133 4.15E-05 4-3.35E-07 1.00 1.00 0.5 0.2

RU-106 ***NOT IDENTIFIED*** 1.00

RU-106 ***NOT IDENTIFIED*** 1.00

RU-106 ***NOT IDENTIFIED*** 1.00

RU-106 ***NOT IDENTIFIED*** 1.00

RU-106 ***NOT IDENTIFIED*** 1.00

RU-106 ***NOT IDENTIFIED*** 1.00

RU-106 ***NOT IDENTIFIED*** 1.00

RU-106 ***NOT IDENTIFIED*** 1.00

RU-106 1.15E-05 1.15E-05 1.00

WGDT 'C'

Purge Time = 45min

5.0 scf

4/27/83

514.0	1.55E-03	0.40	103.74	1.4
XR-125M***NOT IDENTIFIED***				1.00
527.0	8.09E-03	20.00		
1.153 ***NOT IDENTIFIED***				1.00
527.0	7.27E-03	17.00		
1.155 ***NOT IDENTIFIED***				1.00
1240.5	1.95E-03	34.90		
AR-41 ***NOT IDENTIFIED***				1.00
1293.5	8.54E-03	27.00		

UNIDENTIFIED PHOTOPEAKS

ENERGY	RATE(CPM)	% ERR.
175.04	4.34	22.0
180.25	0.64	23.4

WGDT 'C'

2

Purge Time = 47 min

4-27-83

DATA CTRL: WSM, 7-D

AUTOMATIC ISOTOPE ANALYSIS

4/27/83 1454

SEQ. FILE NO. 73

GAS TRS, RM-057, RM 042, 4000000, 1000 SEC

SPEC. FILE NO. 7 LABEL 3

TWENTY 20K6

SUBTRACT BOND 77

COUNT BOND 77

TYPE ECR1 (OR LT) TO START 7

DATE SAMPLE WAS COLLECTED

NU. 7

70

WE F

AUTOMATIC ISOTOPE ANALYSIS

4/27/83 1540

SEQ. FILE NO. 74

GAS TRS, RM-057, RM 042, 4000000, 1000 SEC

SPEC. FILE NO. 8 LABEL 3

TWENTY 20K6

SUBTRACT BOND 77

COUNT BOND 77

BOND TAPE LOADED 77

I= 0

PUMP FILE NO. 74

DATE SAMPLE WAS COLLECTED

NU. 74

GAS 727

YEAR 21000

TIME 71500

SAMPLE VOL. OR WT. 75000 700

TYPE HEADING

MULTI 72

TYPE ECR1 (OR LT) TO START 7

SPEC. WRITTEN IN FILE 72 TAPED 72

WGTED

4/27/83 1612

SAMPLE COUNTING 7 5 4/27/83 1542

SAMPLE COLLECTION DATE 4/27/83 1571

DECAY TIME 0 DAYS 11 MIN

WADT 'C'
 (2)
 Purge = 47 min
 4-27-83

ACC. LIVE TIME 30.0 MIN
 SAMPLE VOL. 4.00E+03 CC '00
 FWHM FILE NO. 1
 END CALIB. FILE 1 LAST CALIB. CHECK 4/17/83
 GSF FILE NO. 5 4000 CC GAS MARIN
 AIA PS. UNIT 7-A'

CH	CHANNEL	NET INTG.	DEGR.	% ERROR	FWHM
1	80.8	42330	4571	0.5	1.6
2	513.9	5730	171	1.4	2.5
3	650.1	10	3	27.2	2.6

AIA ACT. CALC 7-D

WASTE GAS

NUCLIDE	UCI/CC	DECAY CORP.	ABUNDANCE(X)	RATE(CPM)	% ERR	BETA-%
ENERGY						
KE-137	4.05E-05	1.00	3.20E-07	1412.03	0.5	0.2
91.0	4.05E-05		35.00			
KR-85M ***NOT IDENTIFIED***		1.00				
149.5	4.57E-00		74.00			
KE-131M ***NOT IDENTIFIED***		1.00				
163.9	4.21E-04		2.00			
KR-80 ***NOT IDENTIFIED***		1.00				
192.1	4.10E-07		33.00			
KE-132M ***NOT IDENTIFIED***		1.00				
232.0	4.23E-07		14.00			
KE-135 ***NOT IDENTIFIED***		1.00				
242.4	4.32E-00		92.00			
I-131 ***NOT IDENTIFIED***		1.00				
364.5	4.37E-00		82.00			
KR-87 ***NOT IDENTIFIED***		1.00				
403.0	4.30E-00		50.00			
KE-138 ***NOT IDENTIFIED***		1.00				
434.4	4.05E-00		40.00			
KR-85	1.42E-03	1.00	3.10E-05	131.24	1.3	0.2
514.0	1.42E-03		0.40			
KE-135M ***NOT IDENTIFIED***		1.00				
533.0	4.17E-00		30.00			
I-132 ***NOT IDENTIFIED***		1.00				
630.7	4.10E-07		37.00			
KE-137M ***NOT IDENTIFIED***		1.00				
137.0	1.40E-00		14.00			

WGDT

(2)

Purge = 47 min

4-27-83

AD-81 ***** IDENTIFIED ***

1.00

12V3.5

4.97E-05

99.00

UNIDENTIFIED PHOTO COPY

ENLARGED

OVERCOPIED

2.00

0.00-25

0.04

27.5

W6DT 'C'

4-27-83

(3)

Purge time 39 min
(5 ft³)

AUTOMATIC ISOTOPE ANALYSIS

DATE: 4/27/83 1744

SEC. FILE NO. 74

GAS INLET: 15.7 CM 043-400000/1000 SEC

SPEC. FILE NO. 7 LABEL 7

PROG. 1

SUBTRACT: NONE

COUNT: 0000

8000 TAPE: UNDELETED

1=

USND: FILE NO. 74

DATE SAMPLE WAS COLLECTED

MO: 74

DAY: 27

YEAR: 1983

TIME: 1744

SAMPLE VOL. OR WT. 0.000000 SEC

TYPE: HEADLINE

W6DT C/3

TYPE: 1000 (1000) TO START 2

SPEC. WRITTEN IN FILE 20 TAPES 20

W6DT C/3

SAMPLE COUNTING DATE 4/27/83 1744

SAMPLE COLLECTION DATE 4/27/83 1744

DELAY TIME 0 DAYS 5 MIN.

ACC. GIVE TIME 20.0 MIN.

SAMPLE VOL. OR WT. 4.000000 CC/ON

FWHM FILE NO. 1

ENG. CALIB. FILE 1 LAST CALIB. CHECK 4/27/83

EFF. FILE NO. 1 4000 CC GAS MARIN

NO. 74

NO. CENTROID NET INFO. 8000 8 ERROR FWHM

1	00.0	41100	4557	0.0	1.4
2	123.4	150	226	22.1	1.7

NO. 74

NO. 74

NO. 74

NO. 74

NO. 74

NO. 74

WGDT 'C'
4-27-83
Purge = 39 min
(5 ft³)

WADT 'C'

4-27-83

(4)

Purge time 39 min.
(5 f43)

XX DATA CIRCUIT: PGM: 7-07

AUTOMATIC ISOTOPE ANALYSIS

7/21/83 2044

SCR. FILE NO: 72

DAY PRE-AM-257-RM 012-400000-1000 SEC

SPEC. FILE NO: 7 LABEL 1

70001-4

COUNT RATE MOND 72

COUNT RATE 72

MOND, DATE LOADED 72

Is= 2

MOND, FILE NO: 72

DATE SAMPLE WAS COLLECTED

MM: 72

DAY 727

YEAR 71903

TIME 72041

SAMPLE VOL OR WT, 40000 SEC

TYPE HEADING

UNIT C/4

TYPE 1001 (OR 11) TO START 7

SPEC. SECTION IN FILE 27 TAPE 20

UNIT C/4

4/27/83 2115

SAMPLE COUNTING DATE 4/27/83 2042

SAMPLE COLLECTION DATE 4/27/83 2041

DECAY TIME 0 DAYS 4 MIN.

ACC. LIVE TIME 30.0 MIN.

SAMPLE VOL./WT. 4.00E+03 CC/GR

PURM FILE NO. 1

DATE CALIB. FILE 1 LAST CALIB. CHECK 4/27/83

EXT FILE NO. 2 4000 CC GAS MARIN

DATA PK. 0001, 7-41

NO. CONTROL NET INTR. BKOD. 2 ERROR CORR

1	99.7	41478	4507	0.0	1.6
2	220.4	124	153	22.2	1.9
3	513.0	1731	127	1.7	2.8
4	662.4	10	3	27.2	2.4
5	667.3	26	3	22.2	1.6

414 SEC, CALD 3.0

NOTE GAS

NUCLIDE VOL/CC

CHERRY

ABUNDANCE(%) RATE(CPM) 2 ERR DELTA-D

Purge = 39 min
(5 ft³) (4)
4-27-83

NR-123	5.95E-03	1.7E-03	2.1E-03	1.00	1.07E-02	0.2	0.2
100.0	5.95E-03		25.00				
NR-124	***NOT IDENTIFIED***			1.00			
100.0	2.11E-03		74.00				
NR-125	***NOT IDENTIFIED***			1.00			
100.0	7.04E-03		2.00				
NR-126	***NOT IDENTIFIED***			1.00			
100.0	2.92E-03		35.00				
NR-127	***NOT IDENTIFIED***			1.00			
100.0	2.01E-03		14.00				
NR-128	***NOT IDENTIFIED***			1.00			
100.0	2.07E-03		72.00				
NR-129	***NOT IDENTIFIED***			1.00			
100.0	2.24E-03		22.00				
NR-130	***NOT IDENTIFIED***			1.00			
100.0	3.11E-03		50.00				
NR-131	***NOT IDENTIFIED***			1.00			
100.0	2.52E-03		40.00				
NR-132	1.51E-03	2.17E-03		1.00	1.71E-02	1.3	0.1
100.0	1.41E-03		0.40				
NR-133	***NOT IDENTIFIED***			1.00			
100.0	7.24E-03		90.00				
NR-134	***NOT IDENTIFIED***			1.00			
100.0	7.40E-03		89.00				
NR-135	***NOT IDENTIFIED***			1.00			
100.0	1.44E-03		24.00				
NR-136	***NOT IDENTIFIED***			1.00			
100.0	3.14E-03		99.00				

UNIDENTIFIED PHOTOGRAPHS

ENERGY	RATE(CPM)	% ERR
220.04	4.14	25.0
222.05	3.64	27.2
224.05	3.64	22.2

WGDT 'C'

4/29/83

2

6 min

WD-32

WYK 0412 512L 7-0

AUTOMATIC ISOCTE ANALYSIS

SLUR: FILE NO. 12

DAY: 185, RM-017/04 062, 4000000, 1900 SEC

SPEC: FILE NO. 7 LABEL 7

WYKOT C 2

SUBTRACT: 0.000000

COUNT: 0.000000

SOUND: TAPE LOAD: 0.000000

1=

PUMP: FILE NO. 12

DATE: SAMPLE 12 COLLECTED

MO: 74

DAY: 12

YEAR: 1983

TIME: 12:00

SAMPLE: 0.000000

TYPE: 0.000000

WYKOT C 2

TYPE: 0.000000

SPEC: WRITTEN IN FILE 12 TAPE 20

WYKOT C 2

4/29/83

1619

SAMPLE COUNTING DATE: 4/29/83 1625

SAMPLE COLLECTION DATE: 4/29/83 1619

1. DELAY TIME: 0 DAYS 6 MIN

ACC. LIVE TIME: 10.0 MIN

SAMPLE VOL: 0.000003 CC/DR

WYKOT C 2

SUB. CALIB: FILE 12 LAST CALIB: CHECK 4/29/83

WYKOT C 2 4000 CC GAS MARGIN

WYKOT C 2 7-0

WYKOT C 2 NET INFO: 0.000000 X 0.000000

1. 0.000000 26113 0.000000 0.000000 1.0

2. 0.000000 4284 0.000000 1.0 2.0

3. 0.000000 24 0.000000 21.0 2.0

WYKOT C 2 7-0

WYKOT C 2

WGD T 'C'

4/29/83

6² min.

Wavelength	Wavelength	Decay Count	Abundance	Rate (CPM)	X Corr	Delta-B
XL 133	3.76E-05	1.55E-07	1.00	278.03	0.7	0.1
147.5	3.74E-05	15.00				
KR-05M ****NOT IDENTIFIED***			1.00			
147.5	6.40E-05	74.00				
XL-131M****NOT IDENTIFIED***			1.00			
147.5	1.77E-05	2.00				
KR-09 ****NOT IDENTIFIED***			1.00			
176.1	8.44E-05	15.00				
KR-123M****NOT IDENTIFIED***			1.00			
232.0	1.75E-07	14.00				
XL-125 ****NOT IDENTIFIED***			1.00			
247.2	2.75E-05	92.00				
I-131 ****NOT IDENTIFIED***			1.00			
249.3	2.19E-05	92.00				
KR-07 ****NOT IDENTIFIED***			1.00			
403.0	2.43E-05	10.00				
KR-130 ****NOT IDENTIFIED***			1.00			
434.4	2.22E-05	40.00				
KR-02	1.23E-05	1.50E-05	1.00			
514.0	1.21E-05	3.40		142.04	1.4	0.1
XL-135M****NOT IDENTIFIED***			1.00			
527.0	2.25E-05	90.00				
I-123 ****NOT IDENTIFIED***			1.00			
527.7	5.41E-07	97.00				
I-125 ****NOT IDENTIFIED***			1.00			
526.5	1.43E-05	34.00				
KR-41 ****NOT IDENTIFIED***			1.00			
527.4	5.05E-05	99.00				
UNIDENTIFIED PHOTOPEAKS						
Wavelength	Rate (CPM)	X Corr				
441.05	0.24	21.7				

WG DT 'C'
4/29/83
3
WD-32
12 min

1ST MAIN CIRCUIT, MEM. 2-2

AUTOMATIC ISOTOPE ANALYSIS

4/29/83 1815

GEN. FILE NO. 1

RAW IRS-25-057-84 0.2, 400000, 1200, 0.01

SPEC. FILE NO. ? LABEL ?

WENT 2 3

CONTRACT BOND ??

COUNT BOND, IN

BOND TAPE LOADED??

1= 0

BOND FILE NO. = 115

DATE SAMPLE WAS COLLECTED

MO. 74

DAY 22

YEAR 1983

TIME 11:55

SAMPLE VOL. OR WT. 74000 TVE

TYPE BEARING

WENT 2 3

TYPE BOND (OR LID) TO START ?

UPPER WRITTEN IN FILE 22 TAPE 23

WENT 2 3

4/29/83 1816

SAMPLE COUNTING DATE 4/29/83 1816

SAMPLE COLLECTION DATE 4/29/83 1755

DECAY TIME 0 DAYS 21 MIN

ACC. LIVE TIME 30.0 MIN

SAMPLE VOL. OR WT. 4.00E+03 CC/??

GEN. FILE NO. 1

END. CALIB. FILE 1 LAST CALIB. CHECK 4/29/83

OFF FILE NO. 1 4000 CC GAO BOND

115 PR. URM. 2-4

END. CENTROID NET INFO. BY?? % ERROR COUNT

0	100.0	11973	1908	0.0	1.0
1	140.1	120	404	27.0	2.1
2	190.6	03	100	13.2	1.0
3	201.0	140	114	11.4	1.0
4	227.0	1873	11	14.1	2.0
5	240.1	21	10	20.0	2.0

END. COUNT 2-2

W GDT 'C'

4/29/83

3

WAS: 0.00

NUCLIDE	UCI/CC	DECAY CORR:	ABUNDANCE(X)	RATE(CPM)	% ERR	DELTA-C
---------	--------	-------------	--------------	-----------	-------	---------

XE-133	4.59E-05 +/- 2.04E-07	1.00				
51.0	4.59E-05	35.00	1045.03	0.6	0.5	

KR-85M ***NOT IDENTIFIED***	1.00					
149.5	3.25E-00	74.00				

XE-131M ***NOT IDENTIFIED***	1.00					
163.9	1.25E-00	2.00				

KR-80 ***NOT IDENTIFIED***	1.00					
194.1	6.00E-00	35.00				

XE-133M ***NOT IDENTIFIED***	1.00					
232.0	1.20E-00	14.00				

XE-135 ***NOT IDENTIFIED***	1.00					
249.4	1.91E-00	72.00				

I-131 ***NOT IDENTIFIED***	1.00					
304.5	2.35E-00	92.00				

KR-87 ***NOT IDENTIFIED***	1.00					
403.0	3.04E-00	50.00				

XE-133 ***NOT IDENTIFIED***	1.00					
434.4	2.35E-00	40.00				

KR-92	1.57E-03 +/- 2.12E-05	1.00				
514.0	1.57E-03	0.40	185.74	1.3	0.3	

XE-135M ***NOT IDENTIFIED***	1.00					
527.0	5.51E-00	00.00				

I-132 ***NOT IDENTIFIED***	1.00					
529.2	6.63E-00	09.00				

I-135 ***NOT IDENTIFIED***	1.00					
1210.3	1.24E-00	34.00				

KR-91 ***NOT IDENTIFIED***	1.00					
1293.4	4.47E-00	7.00				

UNIDENTIFIED PHOTOPLANS

EMPOY	RATE(CPM)	% ERR
340.34	4.08	27.3
490.34	3.25	10.2
500.04	3.34	11.4
501.35	0.04	20.0

WGDT ~~WCT~~ 'C' (

4/29/83 (

4
WD-32 (

15 min (

0001 1-4-83 1144

SAMPLE COUNTING DATE 4/27/83 2142
SAMPLE COLLECTION DATE 4/27/83 2109
DELAY TIME 3 D 11 22 PM

AGE LIVE TIME 11.21
SAMPLE VOL/M3 1.000000
PUMP FILL NO

LEAD ANALYSIS 12 1.000000 4/27/83
EFF. H. 1.000000 1.000000
DIA. 1.000000

CONCENTRATION ANALYSIS
AUG 0.4 1.0
141 1.0 0.1
AIA ACT 0.0

WASTE GAS

MULTIPLE ANALYSIS
LNUC01 1.000000 1.000000 1.000000 1.000000 1.000000 1.000000

1.000000 1.000000 1.000000 1.000000 1.000000 1.000000

1.000000 1.000000 1.000000 1.000000 1.000000 1.000000

1.000000 1.000000 1.000000 1.000000 1.000000 1.000000

1.000000 1.000000 1.000000 1.000000 1.000000 1.000000

1.000000 1.000000 1.000000 1.000000 1.000000 1.000000

1.000000 1.000000 1.000000 1.000000 1.000000 1.000000

1.000000 1.000000 1.000000 1.000000 1.000000 1.000000

1.000000 1.000000 1.000000 1.000000 1.000000 1.000000

1.000000 1.000000 1.000000 1.000000 1.000000 1.000000

1.000000 1.000000 1.000000 1.000000 1.000000 1.000000

1.000000 1.000000 1.000000 1.000000 1.000000 1.000000

WCT 'C'

4/27/83

4

WD-32

15 min,

1273.0 ***NOT IDENTIFIED*** 1.00

1273.0 1.040-00 29.00

1273.0 ***NOT IDENTIFIED*** 1.00

1273.0 1.040-00 24.00

1273.0 ***NOT IDENTIFIED*** 1.00

1273.0 1.040-00 29.00

WGDT 'C'
4/29/83
WD-32
15 min
4
w/o venting

WGDT C 4F

4/29/83

SAMPLE COUNTING DATE 4/29/83 2035

SAMPLE COLLECTION DATE 4/29/83 2003

DECAY TIME 0 DAYS 25 MIN.

ACQ. LIVE TIME 30.0 MIN.

SAMPLE VOL. 4.00E+03 CC/GR

SUMM FILE NO. 1

END. FILE. FILE 1 LAST CALIB. CHECK 4/29/83

FILE NO. 5 4000 CC GAS MARIN

AIA PK. URMH 2-A

NO.	CENTROID	MLT INFO.	DNCR.	% ERROR	FILE
-----	----------	-----------	-------	---------	------

1	44.07	5101	3.1	1.4	
---	-------	------	-----	-----	--

2	74.71	273	1.2	2.5	
---	-------	-----	-----	-----	--

3	21.3	21.3	2.4	2.4	
---	------	------	-----	-----	--

AIA ACT. CHLD 2-B

WASTE GAS

NUCLIDE	UCI/CC	DECAY CORR.	ABUNDANCE(X)	RATE(CPM)	% ERR	DELTA-E
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VL 123	4.11E-03	1.00	15.00	1466.03	0.15	
--------	----------	------	-------	---------	------	--

131M**NOT IDENTIFIED**	1.00					
------------------------	------	--	--	--	--	--

131M**NOT IDENTIFIED**	1.00					
------------------------	------	--	--	--	--	--

131M**NOT IDENTIFIED**	1.00					
------------------------	------	--	--	--	--	--

131M**NOT IDENTIFIED**	1.00					
------------------------	------	--	--	--	--	--

131M**NOT IDENTIFIED**	1.00					
------------------------	------	--	--	--	--	--

131M**NOT IDENTIFIED**	1.00					
------------------------	------	--	--	--	--	--

131M**NOT IDENTIFIED**	1.00					
------------------------	------	--	--	--	--	--

131M**NOT IDENTIFIED**	1.00					
------------------------	------	--	--	--	--	--

131M**NOT IDENTIFIED**	1.00					
------------------------	------	--	--	--	--	--

4/29/83

WD-32C

[illegible]

WGDT 'C'
WD-32
5
4/29/83
10 min

ONIA CTRL. PCM- 7-2

AUTOMATIC ISOTOPE ANALYSIS
4/29/83 2303

USER: FILE NO. 43

UAS-INS-057, RM 062-400000-1000 SEC

SPEC. FILE NO. 7 LABEL 7

TABO1 C5

CURTBACK WINDING

COUNT BOMB. 74

BOMB. TAPE READSCTY

0=

BOMB. FILE NO. 431 5

DATE SAMPLE WAS COLLECTED

MO- 74

DAY 700

YEAR 77001

TIME 77001

SAMPLE VOL. OR WT. 74000 SEC

TYPE READING

MOOT C. 5

TYPE CTRL. NO. 511 TO START 7

SWIC. SWITCH IN FILE 51 TAPE 00

WGDT 'C'

4/29/83

2303

SAMPLE COUNTING DATE 4/27/83 2303

SAMPLE COLLECTION DATE 4/27/83 2320

ELAPY TIME 0 DAYS 43 MIN

ACT. LIVE TIME 10.5 MIN

SAMPLE VEL. 8.000007 CC/GR

FORM FILE 8

FORM COLLIS. TALL 1 LAST CALIB. CHECK 4/29/83

IF FILE NO. 5 1000 CC GAS MARIN

ALL PMS BOMB. 7-4

CONVERTED ACT. INIT. PKOD. % ERROR CORR.

20.2 10783 1031 0.8 1.3

134.2 105 107 12.5 2.0

129.4 107 100 12.5 2.0

134.2 107 144 14.7 1.1

134.2 107 115 14.7 1.1

134.2 107 115 14.7 1.1

WGDT 'C'

WD-32

5
4/29/83

10min

513.2 5334 14 1.4 2.5
533.4 14 20.4 2.5
ALD ANT GMLC Z-P

WATIE GAE

NUCLEIDE UCI-00 ABUNDANCE(%) RATE(CPM) X 100 DELTA-E
ENERGY

XL-123 4.44E-05 1/- 2.00E-07 1.00
81.9 4.44E-05 25.00 1032.00 0.4 0.4

NR UEM ***NOT IDENTIFIED*** 1.00
122.8 2.94E-00 24.00

XL-121H***NOT IDENTIFIED*** 1.00
123.7 1.12E-04 2.00

NR UEM ***NOT IDENTIFIED*** 1.00
124.3 2.32E-00 25.00

XL-120H***NOT IDENTIFIED*** 1.00
124.9 1.12E-07 14.00

XL-120 ***NOT IDENTIFIED*** 1.00
124.9 1.64E-00 22.00

XL-121 ***NOT IDENTIFIED*** 1.00
124.9 2.32E-00 22.00

XL-120 ***NOT IDENTIFIED*** 1.00
124.9 2.75E-00 20.00

XL-120 ***NOT IDENTIFIED*** 1.00
124.9 2.74E-00 40.00

NR-05 1.54E-03 1/- 2.11E-05 1.00
124.9 1.54E-03 0.40 104.53 1.3 0.2

XL-120H***NOT IDENTIFIED*** 1.00
124.9 4.68E-07 20.00

XL-120H ***NOT IDENTIFIED*** 1.00
124.9 4.21E-07 29.00

XL-120H ***NOT IDENTIFIED*** 1.00
124.9 1.07E-00 34.70

XL-120H ***NOT IDENTIFIED*** 1.00
124.9 3.73E-00 27.00

UNIDENTIFIED PHOTOPLAKS

ENERGY RATE(CPM) X 100

124.9 2.22 12.8
124.9 2.04 12.1

WGDT 'C'

WD-32

5

4/29/83

10 min

WGDT 'C'

4/29/83

WD-32

w/o ⁵ venting
10 min.

WGT: 2.35

4/29/83

2234

SAMPLE COUNTING DATE 4/29/83 2234

SAMPLE COLLECTION DATE 4/29/83 2234

ELAPSED TIME 0 DAYS 6 MIN

AGE: LIVE TIME 30.0 MIN

SAMPLE VOL./WT: 4.00E+03 CC/GM

FWHM FILE NO. 1

ENQ: CALIB. FILE 1 LAST CALIB. CHECK 4/29/83

EFF FILE NO. 3 4000 CC GAS MARIN

AIA PK: 2234 7-6

NO.	CENTROID	NET INTG.	ENQ.	X ERROR	FWHM
1	97.1	33037	1947	0.1	1.4
2	242.8	121	504	27.8	1.8
3	242.1	123	429	27.1	2.1
4	242.0	113	704	1.2	2.5
5	242.0	11	0	27.7	2.6
6	242.0	12	0	20.7	2.6
7	242.0	20	0	22.4	2.6
8	242.0	22	0	20.0	2.6
9	242.0	27	0	19.2	2.6
10	242.0	28	2	22.1	2.6
11	242.0	17	0	24.3	2.1

AIA AUTO SACC 7-8

WASTE DAB

NUCLIDE	DCI/CC	DECAY CORR.	ABUNDANCE(%)	RATE(CPM)	X ERR	DELTA-E
ENERGY						
SE-137	6.14E-05 +/- 2.22E-07	1.00				
81.0	6.14E-05	35.00	1434.03	0.5	0.4	
KR-81M ***NOT IDENTIFIED***		1.00				
149.5	2.47E-08	74.00				
SE-131 ***NOT IDENTIFIED***		1.00				
151.0	1.00E-04	2.00				
KR-80 ***NOT IDENTIFIED***		1.00				
196.1	4.87E-08	33.00				
SE-131 ***NOT IDENTIFIED***		1.00				
151.0	1.00E-04	14.00				
LA-113 ***NOT IDENTIFIED***		1.00				
207.4	3.07E-08	92.00				
LA-113 ***NOT IDENTIFIED***		1.00				
207.4	3.07E-08	92.00				
LA-113 ***NOT IDENTIFIED***		1.00				
207.4	3.07E-08	92.00				
LA-113 ***NOT IDENTIFIED***		1.00				
207.4	3.07E-08	92.00				

WGDT 'C'

4/29/83

WD-32

w/o venting
10 min

(1E-138 ***NOT IDENTIFIED*** 1.00

439.8 3.14E-02 42.00

(1E-138 1.15E-03 1.00

510.0 2.15E-03 0.90

(1E-138 ***NOT IDENTIFIED*** 1.00

520.0 3.25E-02 30.00

(1-133 ***NOT IDENTIFIED*** 1.00

529.0 4.72E-02 27.00

(1-125 ***NOT IDENTIFIED*** 1.00

1260.0 3.44E-02 34.90

(AM-41 ***NOT IDENTIFIED*** 1.00

1297.0 1.28E-02 27.00

(UNIDENTIFIED - PHOTOPEAKS

ENERGY RATE(CPM) % ERR

342.75 4.05 27.0

349.34 4.25 22.1

377.05 0.44 27.1

390.05 0.44 23.9

396.04 0.44 22.4

403.03 0.24 20.0

408.75 0.24 13.2

440.03 0.24 22.1

446.05 0.24 25.2

11 WGD
 10 mm/Neut. TK
 10 min/WGD
 Santa
 5-16-83

DATA CTRL. PGM. 7-D

AUTOMATIC ISOTOPE ANALYSIS

5/16/83 1316

SEQ. FILE NO.

GAS TKS, RM-057, RM 062, 4000CC, 1800 SEC

SPEC. FILE NO. ? LABEL

?

SUBTRACT BGND

COUNT BGND.

BGND. TAPE LOADED

I= 0

BGND. FILE NO. =

DATE SAMPLE WAS COLLECTED

MO.

DAY

YEAR

TIME

SAMPLE VOL. OR WT. ?

TYPE HEADING

TYPE [CR] (OR LT) TO START

SPEC. WRITTEN IN FILE 29 TAPE 31

A WGD

5/16/83 1351

SAMPLE COUNTING DATE 5/16/83 1317

SAMPLE COLLECTION DATE 5/16/83 1311

DECAY TIME 0 DAYS 6 MIN.

ACQ. LIVE TIME 30.0 MIN.

SAMPLE VOL./WT. 4.00E+03 CC/GR

FWHM FILE NO. 1

ENG. CALIB. FILE 1 LAST CALIB. CHECK 5/16/83

EFF FILE NO. 5 4000 CC GAS MARIN

AIA PK. SRCH. 7-A

NO.	CENTROID	NET INTG.	BKGD.	% ERROR	FWHM
-----	----------	-----------	-------	---------	------

1	63.4	56280	1458118	3.1	1.5
---	------	-------	---------	-----	-----

2	81.3	10118821	1498214	0.0	1.6
---	------	----------	---------	-----	-----

3	161.3	64164	62870	0.7	1.7
---	-------	-------	-------	-----	-----

4	233.7	5954	2406	1.7	1.8
---	-------	------	------	-----	-----

5	303.2	1509	762	3.7	1.9
---	-------	------	-----	-----	-----

6	339.3	114	429	27.4	2.1
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7	344.2	106	342	26.5	2.1
---	-------	-----	-----	------	-----

8	384.1	551	265	6.0	2.2
---	-------	-----	-----	-----	-----

9	514.2	3629	397	1.8	2.5
---	-------	------	-----	-----	-----

10	593.9	64	23	16.5	2.6
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AIA ACT, CALC 7-D

A' WADT
10 min/West TK
10 min/WADT
Santi
5-16-83
% ERR DELTA-E

WASTE GAS

NUCLIDE ENERGY	UCI/CC	DECAY CORR. ABUNDANCE(%)	RATE(CPM)	% ERR	DELTA-E
XE-133 81.0	1.43E-02 +/- 4.31E-06 1.43E-02	35.00	1.00 337200.04	0.0	-0.2
KR-85M ***NOT IDENTIFIED*** 149.5	< 1.87E-07	74.00	1.00		
XE-131M ***NOT IDENTIFIED*** 163.9	(< 8.09E-06)	2.00	1.00		
KR-88 ***NOT IDENTIFIED*** 196.1	< 1.03E-07	35.00	1.00		
XE-133M 232.8	1.98E-05 +/- 3.46E-07 1.98E-05	14.00	1.00 198.43	1.7	-0.5
XE-135 ***NOT IDENTIFIED*** 249.6	(< 2.14E-08)	92.00	1.00		
I-131 ***NOT IDENTIFIED*** 364.5	< 1.74E-08	82.00	1.00		
KR-87 ***NOT IDENTIFIED*** 403.0	< 2.79E-08	50.00	1.00		
XE-138 ***NOT IDENTIFIED*** 434.4	(< 2.67E-08)	48.00	1.00		
KR-85 514.0	1.02E-03 +/- 1.87E-05 1.02E-03	0.40	1.00 120.93	1.8	0.1
XE-135M ***NOT IDENTIFIED*** 527.0	< 1.96E-08	80.00	1.00		
I-133 ***NOT IDENTIFIED*** 529.9	< 1.62E-08	89.00	1.00		
I-135 ***NOT IDENTIFIED*** 1260.5	< 1.23E-08	34.90	1.00		
AR-41 ***NOT IDENTIFIED*** 1293.6	< 4.36E-09	99.00	1.00		

UNIDENTIFIED PHOTOPEAKS

ENERGY	RATE(CPM)	% ERR
63.45	1876.05	3.1
161.04	2138.04	0.7
302.95	50.34	3.7
339.04	3.84	27.4
343.95	3.55	26.5

XXXXXXAIA CTRL. PGM. 7-D'

AUTOMATIC ISOTOPE ANALYSIS

5/16/83 1122

SEQ. FILE NO.

GAS TKS, RM-057, RM 062, 4000CC, 1800 SEC

SPEC. FILE NO.? LABEL

?

SUBTRACT BGND

COUNT BGND.

BGND. TAPE LOADED

I= 0

BGND. FILE NO. =

DATE SAMPLE WAS COLLECTED

MO.

DAY

YEAR

TIME

SAMPLE VOL. OR WT. ?

TYPE HEADING

TYPE [CR] (OR LT) TO START

SPEC. WRITTEN IN FILE 28 TAPE 31

A WGD

5/16/83 1158

SAMPLE COUNTING DATE 5/16/83 1123

SAMPLE COLLECTION DATE 5/16/83 1115

DECAY TIME 0 DAYS 8 MIN.

ACQ. LIVE TIME 30.0 MIN.

SAMPLE VOL./WT. 4.00E+03 CC/GR

FWHM FILE NO. 1

ENG. CALIB. FILE 1 LAST CALIB. CHECK 5/16/83

EFF FILE NO. 5 4000 CC GAS MARIN

AIA PK. SRCH. 7-A'

NO.	CENTROID	NET INTG.	BKGD.	% ERROR	FWHM
1	63.4	53940	1509717	3.3	1.5
2	81.2	10307140	1555648	0.0	1.6
3	161.2	67429	65576	0.7	1.7
4	233.6	6036	2559	1.7	1.8
5	303.1	1613	728	3.4	1.9
6	384.0	639	257	5.3	2.2
7	514.3	3541	396	1.9	2.5

AIA ACT. CALC 7-D

A WGD

10 min Recirc

on Next Tank

10 min Recirc

on A WGD

Santi

5-16-83

'A' WADT 10 min / New. TK

10 min / A WADT

5-16-83 Santi

WASTE GAS

NUCLIDE	UCI/CC	DECAY CORR.	ABUNDANCE(%)	RATE(CPM)	% ERR	DELTA-E
ENERGY						
XE-133	1.46E-02 +/- 4.40E-06	1.00				
81.0	1.46E-02		35.00	343500.04	0.0	-0.1
KR-85M ***NOT IDENTIFIED***		1.00				
149.5	(< 1.92E-07)		74.00			
XE-131M ***NOT IDENTIFIED***		1.00				
163.9	(< 8.25E-06)		2.00			
KR-88 ***NOT IDENTIFIED***		1.00				
196.1	< 1.08E-07		35.00			
XE-133M	2.01E-05 +/- 3.50E-07	1.00				
232.8	2.01E-05		14.00	201.24	1.7	-0.4
XE-135 ***NOT IDENTIFIED***		1.00				
249.6	(< 2.13E-08)		92.00			
I-131 ***NOT IDENTIFIED***		1.00				
364.5	< 1.74E-08		82.00			
KR-87 ***NOT IDENTIFIED***		1.00				
403.0	< 3.18E-08		50.00			
XE-138 ***NOT IDENTIFIED***		1.00				
434.4	< 2.58E-08		48.00			
KR-85	1.00E-03 +/- 1.85E-05	1.00				
514.0	1.00E-03		0.40	118.04	1.8	0.0
XE-135M ***NOT IDENTIFIED***		1.00				
527.0	< 1.71E-08		80.00			
I-133 ***NOT IDENTIFIED***		1.00				
529.9	< 1.44E-08		89.00			
I-135 ***NOT IDENTIFIED***		1.00				
1260.5	< 1.04E-08		34.90			
AR-41 ***NOT IDENTIFIED***		1.00				
1293.6	< 3.67E-09		99.00			

UNIDENTIFIED PHOTOPEAKS

ENERGY	RATE(CPM)	% ERR
63.45	1798.05	3.3
160.94	2247.04	0.7
302.84	53.75	3.4
383.75	21.34	5.3

Waste Gas Decay
TANK 'A'
5/13/83 ①
16:41 hrs
E. Clement

X DATA CTRL: PGM. 7-D'

AUTOMATIC ISOTOPE ANALYSIS

5/13/83 1642

SEQ. FILE NO. 73

GAS TKS. RM-057. RM 062. 4000CC. 1800 SEC

SPEC. FILE NO. ? LABEL ?

?GAS DEC TK

SUBTRACT BGND ? Y

COUNT BGND. ?N

BGND. TAPE LOADED ? Y

I= 0

BGND. FILE NO. = ?175

DATE SAMPLE WAS COLLECTED

MO. ?5

DAY ?13

YEAR ?1983

TIME ?1644

SAMPLE VOL. OR WT. ?4000 ?CC

TYPE HEADING

WASTE GAS DECAY TANK A

TYPE [CR] (OR LT) TO START ? 'A'

SPEC. WRITTEN IN FILE 10 TAPE 31

WASTE GAS DECAY TANK A

5/13/83 1720

SAMPLE COUNTING DATE 5/13/83 1644

SAMPLE COLLECTION DATE 5/13/83 1644

ERROR ENTER DECAY TIME(DAYS) ? .0020

DECAY TIME 0 DAYS 3 MIN.

ACQ. LIVE TIME 30.0 MIN.

SAMPLE VOL./WT. 4.00E+03 CC/GR

FWHM FILE NO. 1

ENG. CALIB. FILE 1 LAST CALIB. CHECK 5/11/83

EFF FILE NO. 5 4000 CC GAS MARIN

AIA PK. SRCH. 7-A'

NO.	CENTROID	NET INTG.	BKGD.	% ERROR	FWHM
1	63.0	48928	1971164	4.1	1.5
2	81.0	13265175	2272056	0.0	1.6
3	142.7	2853	224806	23.6	1.7
4	160.9	131074	139310	0.5	1.7
5	233.3	13034	6605	1.2	1.8
6	302.9	1901	1277	3.5	1.9
7	383.9	850	277	4.4	2.2
8	514.0	3289	458	2.0	2.5
9	588.4	56	39	20.8	2.6
10	594.1	80	32	15.1	2.6

AIA ACT. CALC 7-D

Waste Gas Decay
 Tank 1
 5/13/83 (2)
 16:41 hrs E. Clements

WASTE GAS

NUCLIDE	UCI/CC	DECAY CORR.	ABUNDANCE(%)	RATE(CPM)	% ERR	DELTA-E
ENERGY						
XE-133	1.89E-02 +/- 5.67E-06	1.00				
81.0	1.89E-02		35.00	442100.04	0.0	0.0
KR-85M ***NOT IDENTIFIED***		1.00				
149.5	(< 2.77E-07)		74.00			
XE-131M ***NOT IDENTIFIED***		1.00				
163.9	(< 1.12E-05)		2.00			
KR-88 ***NOT IDENTIFIED***		1.00				
196.1	< 1.74E-07		35.00			
XE-133M	4.34E-05 +/- 5.39E-07	1.00				
232.8	4.34E-05		14.00	434.44	1.2	-0.4
XE-135 ***NOT IDENTIFIED***		1.00				
249.6	(< 3.11E-08)		92.00			
I-131 ***NOT IDENTIFIED***		1.00				
364.5	< 1.96E-08		82.00			
KR-87 ***NOT IDENTIFIED***		1.00				
403.0	< 3.50E-08		50.00			
XE-138 ***NOT IDENTIFIED***		1.00				
434.4	< 2.93E-08		48.00			
KR-85	9.29E-04 +/- 1.83E-05	1.00				
514.0	9.29E-04		0.40	109.63	2.0	0.2
XE-135M ***NOT IDENTIFIED***		1.00				
527.0	< 2.14E-08		80.00			
I-133 ***NOT IDENTIFIED***		1.00				
529.9	(< 1.91E-08)		89.00			
I-135 ***NOT IDENTIFIED***		1.00				
1260.5	< 1.23E-08		34.90			
AR-41 ***NOT IDENTIFIED***		1.00				
1293.6	< 4.36E-08		99.00			

UNIDENTIFIED PHOTOPEAKS

ENERGY	RATE(CPM)	% ERR
63.05	1630.05	4.1
142.75	95.14	23.6
160.85	4369.04	0.5
302.95	63.34	3.5
383.75	28.34	4.4

Waste Gas Decay

TANK 'A'

5/13/83

16:41 hrs E. Elmer

588.15
593.85

1.84
2.65

20.8
15.1

Waste Gas Decay

TANK 'A'

5/13/83

19:10 hrs E. Clements

CD
*X DATA CTRL. PGM. 7-D'

AUTOMATIC ISOTOPE ANALYSIS

5/13/83 1912

SEQ. FILE NO. ?3

GAS TKS, RM-057, RM 062, 4000CC, 1800 SEC

SPEC. FILE NO. ? LABEL ?

?WSDT A

SUBTRACT BGND ?Y

COUNT BGND. ?N

BGND. TAPE LOADED ?Y

I= 0

BGND. FILE NO. = ?175

DATE SAMPLE WAS COLLECTED

MO. ?5

DAY ?13

YEAR ?1983

TIME ?1910

SAMPLE VOL. OR WT. ?4000 ?CC

TYPE HEADING

WASTE TANK A GAS

TYPE [CR] (OR LT) TO START ? 31

SPEC. WRITTEN IN FILE 11 TAPE 31

WASTE TANK A GAS

5/13/83 1950

SAMPLE COUNTING DATE 5/13/83 1914

SAMPLE COLLECTION DATE 5/13/83 1910

DECAY TIME 0 DAYS 4 MIN.

ACQ. LIVE TIME 30.0 MIN.

SAMPLE VOL./WT. 4.00E+03 CC/GR

FWHM FILE NO. 1

ENG. CALIB. FILE 1 LAST CALIB. CHECK 5/11/83

EFF FILE NO. 5 4000 CC GAS MARIN

AIA PK. SRCH. 7-A'

NO.	CENTROID	NET INTG.	BKGD.	% ERROR	FWHM
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1	63.4	68239	2296488	3.2	1.5
2	81.2	13449029	2523754	0.0	1.6
3	161.3	120850	136883	0.5	1.7
4	233.7	12875	6513	1.3	1.8

5	303.3	1990	1190	3.3	1.9
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6	384.1	793	344	4.9	2.2
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8 593.2 46 64 28.8 2.6
AIA, ACT, CALC 7-D

Waste Gas Decay
TANK A' ②
5/13/83
19:10 E. E. E.

WASTE GAS

NUCLIDE	UCI/CC	DECAY CORR.	% ERR	DELTA-E
ENERGY		ABUNDANCE(%) RATE(CPM)		
XE-133	1.91E-02 +/- 5.74E-06	1.00		
81.0	1.91E-02	448300.05	0.0	-0.1
KR-85M ***NOT IDENTIFIED***		1.00		
149.5	(< 2.78E-07)	74.00		
XE-131M ***NOT IDENTIFIED***		1.00		
163.9	(< 1.15E-05)	2.00		
KR-88 ***NOT IDENTIFIED***		1.00		
196.1	< 1.75E-07	35.00		
XE-133M	4.30E-05 +/- 5.37E-07	1.00		
232.8	4.30E-05	429.13	1.2	-0.8
XE-135 ***NOT IDENTIFIED***		1.00		
249.6	(< 3.16E-08)	92.00		
I-131 ***NOT IDENTIFIED***		1.00		
364.5	< 2.00E-08	82.00		
KR-87 ***NOT IDENTIFIED***		1.00		
403.0	< 3.36E-08	50.00		
XE-138 ***NOT IDENTIFIED***		1.00		
434.4	< 2.98E-08	48.00		
KR-85	9.55E-04 +/- 1.82E-05	1.00		
514.0	9.55E-04	112.74	1.9	-0.1
XE-135M ***NOT IDENTIFIED***		1.00		
527.0	< 2.37E-08	80.00		
I-133 ***NOT IDENTIFIED***		1.00		
529.9	< 1.99E-08	89.00		
I-135 ***NOT IDENTIFIED***		1.00		
1260.5	(< 1.23E-08)	34.90		
AR-41 ***NOT IDENTIFIED***		1.00		
1293.6	< 4.36E-09	99.00		

UNIDENTIFIED PHOTOPEAKS

ENERGY	RATE(CPM)	% ERR
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63.45	2274.04	3.2
161.25	4028.04	0.5

585.95
592.95

26.44
1.54

4.9
28.8

Wast Gas Decoy
Tank 'A' (B)
5/13/83
1910 EEP

A W G D T.

5713/83.

S. Sundaram

CD
*X CAIA CTRL. PGM. 7-D'

AUTOMATIC ISOTOPE ANALYSIS

5/13/83 1340

SEQ. FILE NO. ?3

GAS TKS, RM-057, RM 062, 4000CC, 1800 SEC

SPEC. FILE NO. ? LABEL ?

?A W G D T

SUBTRACT BGND ?Y

COUNT BGND. ?N

BGND. TAPE LOADED ?Y

I= 0

BGND. FILE NO. = ?175

DATE SAMPLE WAS COLLECTED

MO. ?5

DAY ?13

YEAR ?1983

TIME ?1338

SAMPLE VOL. OR WT. ?4000 ?CC

TYPE HEADING

A W G D T

TYPE [CR] (OR LT) TO START ?

SPEC. WRITTEN IN FILE 9 TAPE 31

A W G D T

5/13/83 1417

SAMPLE COUNTING DATE 5/13/83 1341

SAMPLE COLLECTION DATE 5/13/83 1338

DECAY TIME 0 DAYS 3 MIN.

ACQ. LIVE TIME 30.0 MIN.

SAMPLE VOL./WT. 4.00E+03 CC/GR

FWHM FILE NO. 1

ENG. CALIB. FILE 1 LAST CALIB. CHECK 5/11/83

EFF FILE NO. 5 4000 CC GAS MARIN

AIA PK. SRCH. 7-A'

NO.	CENTROID	NET INTG.	BKGD.	% ERROR	FWHM
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1	63.5	77693	2281544	2.8	1.5
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2	81.5	13593785	2514573	0.0	1.6
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3	161.4	124344	139332	0.5	1.7
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4	233.9	13795	7433	1.2	1.8
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5	303.5	1929	1150	3.4	1.9
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6	384.3	769	367	5.0	2.2
---	-------	-----	-----	-----	-----

7	514.6	3304	420	1.9	2.5
---	-------	------	-----	-----	-----

8	663.2	21	6	28.0	2.6
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AIA ACT. CALC 7-D

A' W G D T.
5713183.
S. Sundaram

WASTE GAS

NUCLIDE ENERGY	UCI/CC	DECAY CORR. ABUNDANCE(%)	RATE(CPM)	% ERR	DELTA-E
XE-133 81.0	1.92E-02 +/- 5.77E-06 1.92E-02	35.00	1.00 453100.04	0.0	-0.4
KR-85M ***NOT IDENTIFIED*** 149.5	(< 2.79E-07)	74.00	1.00		
XE-131M ***NOT IDENTIFIED*** 163.9	(< 1.17E-05)	2.00	1.00		
KR-88 ***NOT IDENTIFIED*** 196.1	(< 1.75E-07)	35.00	1.00		
XE-133M 232.8	4.61E-05 +/- 5.62E-07 4.61E-05	14.00	1.00 459.83	1.2	-1.0
XE-135 ***NOT IDENTIFIED*** 249.6	(< 3.11E-08)	92.00	1.00		
I-131 ***NOT IDENTIFIED*** 364.5	< 1.94E-08	82.00	1.00		
KR-87 ***NOT IDENTIFIED*** 403.0	< 3.45E-08	50.00	1.00		
XE-138 ***NOT IDENTIFIED*** 434.4	< 2.93E-08	48.00	1.00		
KR-85 514.0	9.33E-04 +/- 1.81E-05 9.33E-04	0.40	1.00 110.13	1.9	-0.3
XE-135M ***NOT IDENTIFIED*** 527.0	< 2.91E-08	80.00	1.00		
I-133 ***NOT IDENTIFIED*** 529.9	< 2.46E-08	89.00	1.00		
I-135 ***NOT IDENTIFIED*** 1260.5	< 1.43E-08	34.90	1.00		
AR-41 ***NOT IDENTIFIED*** 1293.6	< 5.05E-09	99.00	1.00		

UNIDENTIFIED PHOTOPEAKS

ENERGY	RATE(CPM)	% ERR
63.55	2589.04	2.8
161.35	4144.04	0.5
303.54	64.35	3.4
384.15	25.64	5.0
662.95	0.74	28.0

A' W GDT.
5/13/83
S. Sundaram

*X 0

AUTOMATIC ISOTOPE ANALYSIS

5/13/83 1236

SEQ: FILE NO. ?3

GAS TKS, RM-057, RM 062, 4000CC, 1800 SEC

SPEC. FILE NO.? LABEL ?

?A W GDT

SUBTRACT BGND ?Y

COUNT BGND.?N

BGND.TAPE LOADED?Y

I= 0

BGND.FILE NO.=?175

DATE SAMPLE WAS COLLECTED

MO. ?5

DAY ?13

YEAR ?1983

TIME ?1234

SAMPLE VOL. OR WT. ?4000 ?CC

TYPE HEADING

A W GDT

TYPE [CR] (OR LT) TO START ?

SPEC. WRITTEN IN FILE 8 TAPE 31

A W GDT

5/13/83 1313

SAMPLE COUNTING DATE 5/13/83 1236

SAMPLE COLLECTION DATE 5/13/83 1234

DECAY TIME 0 DAYS 2 MIN.

ACQ. LIVE TIME 30.0 MIN.

SAMPLE VOL./WT. 4.00E+03 CC/GR

FWHM FILE NO. 1

ENG. CALIB. FILE 1 LAST CALIB. CHECK 5/11/83

EFF FILE NO. 5 4000 CC GAS MARIN

AIA PK. SRCH. 7-A'

NO.	CENTROID	NET INTG.	BKGD.	% ERROR	FWHM
1	63.2	58764	2311232	3.7	1.5
2	91.0	13192466	2532140	0.0	1.6
3	160.9	129429	150360	0.5	1.7
4	233.3	13362	6678	1.2	1.8
5	303.0	1900	1250	3.5	1.9
6	384.0	719	355	5.3	2.2
7	514.1	3330	413	1.9	2.5
8	588.1	60	51	21.3	2.6
9	594.1	49	47	24.5	2.6
10	1461.0	15	1	28.7	2.3

ACT: CALC 7-D

A W G D J
5/13/83

S Sundaram.

WASTE GAS

NUCLIDE ENERGY	UCI/CC	DECAY CORR. ABUNDANCE(%)	RATE(CPM)	% ERR	DELTA-E
XE-133 81.0	1.88E-02 +/- 5.64E-06 1.88E-02	35.00	1.00 439700.04	0.0	0.0
KR-85M ***NOT IDENTIFIED*** 149.5	(< 3.51E-07)	74.00	1.00		
XE-131M ***NOT IDENTIFIED*** 163.9	(< 1.36E-05)	2.00	1.00		
KR-88 ***NOT IDENTIFIED*** 196.1	< 2.19E-07	35.00	1.00		
XE-133M 232.8	4.45E-05 +/- 5.43E-07 4.45E-05	14.00	1.00 445.44	1.2	-0.4
XE-135 ***NOT IDENTIFIED*** 249.6	(< 4.17E-08)	92.00	1.00		
I-131 ***NOT IDENTIFIED*** 364.5	< 2.53E-08	82.00	1.00		
KR-87 ***NOT IDENTIFIED*** 403.0	< 4.36E-08	50.00	1.00		
XE-138 ***NOT IDENTIFIED*** 434.4	< 3.62E-08	48.00	1.00		
KR-85 514.0	9.41E-04 +/- 1.81E-05 9.41E-04	0.40	1.00 111.04	1.9	0.1
XE-135M ***NOT IDENTIFIED*** 527.0	(< 2.95E-08)	80.00	1.00		
I-133 ***NOT IDENTIFIED*** 529.9	< 2.54E-08	89.00	1.00		
I-135 ***NOT IDENTIFIED*** 1260.5	(< 3.64E-08)	34.90	1.00		
AR-41 ***NOT IDENTIFIED*** 1293.6	< 1.28E-08	99.00	1.00		

UNIDENTIFIED PHOTOPEAKS

ENERGY	RATE(CPM)	% ERR
63.25	1958.05	3.7
160.85	4314.04	0.5
303.04	63.34	3.5
383.84	23.94	5.3

A' WGD
5-13-83
R. Haug

CD
*X 0

AUTOMATIC ISOTOPE ANALYSIS
5/13/83 1133

SEQ. FILE NO. ?3

15 min. REC. REC.

GAS TKS, RM-057, RM 062, 4000CC, 1800 SEC
SPEC. FILE NO. ? LABEL ?
?

SUBTRACT BGND ?Y
COUNT BGND. ?N
BGND. TAPE LOADED ?Y

T= 0
BGND. FILE NO. = ?175
DATE SAMPLE WAS COLLECTED

MO. ?5
DAY ?13
YEAR ?1983
TIME ?1131
SAMPLE VOL. OR WT. ?4000 ?CC

TYPE HEADING
A WGD
TYPE [CR] (OR LT) TO START ?
SPEC. WRITTEN IN FILE 7 TAPE 31

A WGD
5/13/83 1210

SAMPLE COUNTING DATE 5/13/83 1134
SAMPLE COLLECTION DATE 5/13/83 1131
DECAY TIME 0 DAYS 3 MIN.
ACQ. LIVE TIME 30.0 MIN.
SAMPLE VOL./WT. 4.00E+03 CC/GR
FWHM FILE NO. 1
ENG. CALIB. FILE 1 LAST CALIB. CHECK 5/11/83
EFF FILE NO. 5 4000 CC GAS MARIN
AIA PK. SRCH. 7-A'

NO.	CENTROID	NET INTG.	BKGD.	% ERROR	FWHM
1	62.9	47375	1983913	4.2	1.5
2	80.9	13682565	2461315	0.0	1.6
3	142.7	3210	225059	21.0	1.7
4	160.8	129406	138318	0.5	1.7
5	233.1	13662	7515	1.2	1.8
6	302.9	1947	1258	3.4	1.9
7	383.8	782	369	5.0	2.2
8	513.9	3110	480	2.1	2.5

AIA ACT. CALC 7-D

A' WQDT
5-13-83
R Haug

WASTE GAS

NUCLIDE ENERGY	UCI/CC	DECAY CORR. ABUNDANCE(%)	RATE(CPM)	% ERR	DELTA-E
XE-133 81.0	1.95E-02 +/- 5.86E-06 1.95E-02	35.00	1.00 456000.04	0.0	0.1
KR-85M ***NOT IDENTIFIED*** 149.5	(< 2.77E-07)	74.00	1.00		
XE-131M ***NOT IDENTIFIED*** 163.9	(< 1.11E-05)	2.00	1.00		
KR-88 ***NOT IDENTIFIED*** 196.1	< 1.72E-07	35.00	1.00		
XE-133M 232.8	4.55E-05 +/- 5.60E-07 4.55E-05	14.00	1.00 455.44	1.2	-0.2
XE-135 ***NOT IDENTIFIED*** 249.6	(< 3.12E-08)	92.00	1.00		
I-131 ***NOT IDENTIFIED*** 364.5	< 1.95E-08	82.00	1.00		
KR-87 ***NOT IDENTIFIED*** 403.0	(< 3.25E-08)	50.00	1.00		
XE-138 ***NOT IDENTIFIED*** 434.4	< 3.14E-08	48.00	1.00		
KR-85 514.0	8.78E-04 +/- 1.80E-05 8.78E-04	0.40	1.00 103.63	2.1	0.3
XE-135M ***NOT IDENTIFIED*** 527.0	< 1.84E-08	80.00	1.00		
I-133 ***NOT IDENTIFIED*** 529.9	< 1.63E-08	89.00	1.00		
I-135 ***NOT IDENTIFIED*** 1260.5	< 1.04E-08	34.90	1.00		
AR-41 ***NOT IDENTIFIED*** 1293.6	< 3.67E-09	99.00	1.00		

UNIDENTIFIED PHOTOPEAKS

ENERGY	RATE(CPM)	% ERR
62.95	1579.05	4.2
142.75	107.05	21.0
160.75	4313.04	0.5
302.95	64.94	3.4
383.65	26.04	5.0

A' WQDT
5-13-83
R. Hany

15 min. Recirc.

7D
*X 0 1

AUTOMATIC ISOTOPE ANALYSIS

5/13/83 1036

SEQ. FILE NO. 73

GAS TKS, RM-057, RM 062, 400000, 1800 SEC

SPEC. FILE NO. ? LABEL ?

SUBTRACT BGND ?Y

COUNT BGND. ?N

BGND. TAPE LOADED ?Y

I= 0

BGND. FILE NO. = ?175

DATE SAMPLE WAS COLLECTED

MO. 75

DAY 713

YEAR 71983

TIME 71034

SAMPLE VOL. OR WT. 74000 700

TYPE HEADING

A WQD\GDT

TYPE [CR] (OR LT) TO START ? 2

SPEC. WRITTEN IN FILE 6 TAPE 31

A WQDT

5/13/83 1113

SAMPLE COUNTING DATE 5/13/83 1037

SAMPLE COLLECTION DATE 5/13/83 1034

DECAY TIME 0 DAYS 3 MIN.

ACQ. LIVE TIME 30.0 MIN.

SAMPLE VOL./WT. 4.00E+03 CC/GR

FWHM FILE NO. 1

ENG. CALIB. FILE 1 LAST CALIB. CHECK 5/11/83

EFF FILE NO. 5 4000 CC GAS MARIN

AIA PK. SRCH. 7-A'

NO.	CENTROID	NET INTG.	BKGD.	% ERROR	FWHM
1	62.9	46501	1964772	4.3	1.5
2	80.9	13636547	2439388	0.0	1.6
3	143.1	3893	220551	17.1	1.7
4	160.8	128857	135901	0.5	1.7
5	233.1	14116	7098	1.2	1.8
6	302.9	1829	1252	3.6	1.9
7	383.8	753	331	5.0	2.2
8	513.9	3292	426	2.0	2.5
9	593.2	57	62	23.7	2.6

AIA ACT. CALC 7-D

A' WQDT
5-13-83
R Haug

WASTE GAS

NUCLIDE ENERGY	UCI/CC	DECAY CORR. ABUNDANCE(%)	RATE(CPM)	% ERR	DELTA-E
XE-133 81.0	1.94E-02 +/- 5.84E-06 1.94E-02	35.00	1.00 454500.04	0.0	0.1
KR-85M ***NOT IDENTIFIED*** 149.5	(< 2.75E-07)	74.00	1.00		
XE-131M ***NOT IDENTIFIED*** 163.9	(< 1.10E-05)	2.00	1.00		
KR-88 ***NOT IDENTIFIED*** 196.1	< 1.72E-07	35.00	1.00		
XE-133M 232.8	4.70E-05 +/- 5.60E-07 4.70E-05	14.00	1.00 470.53	1.2	-0.2
XE-135 ***NOT IDENTIFIED*** 249.6	(< 3.03E-08)	92.00	1.00		
I-131 ***NOT IDENTIFIED*** 364.5	< 1.88E-08	82.00	1.00		
KR-87 ***NOT IDENTIFIED*** 403.0	< 3.43E-08	50.00	1.00		
XE-138 ***NOT IDENTIFIED*** 434.4	< 3.33E-08	48.00	1.00		
KR-85 514.0	9.30E-04 +/- 1.81E-05 9.30E-04	0.40	1.00 109.74	2.0	0.3
XE-135M ***NOT IDENTIFIED*** 527.0	< 2.21E-08	80.00	1.00		
I-133 ***NOT IDENTIFIED*** 529.9	< 1.90E-08	89.00	1.00		
I-135 ***NOT IDENTIFIED*** 1260.5	< 1.23E-08	34.90	1.00		
AR-41 ***NOT IDENTIFIED*** 1293.6	< 4.36E-09	99.00	1.00		

UNIDENTIFIED PHOTOPEAKS

ENERGY	RATE(CPM)	% ERR
62.95	1550.05	4.3
143.14	129.74	17.1
160.75	4295.04	0.5
302.95	60.94	3.6
383.65	25.14	5.0