START 9213539.1974 0046934 64050-WES-536

TELEDYNE ISOTOPES

WESTON/WESTINGHOUSE/HANFORD

Case Narrative/Cover Sheet for Reports of Analysis and Lab Data

JUN 1992 RECEIVED OSM DMO

Date 06-12-92

TI #'s 64050 - 64052

WO # 4-5984

Comments:
Activity for Matrix Spike TI #64051 Matrix Spike Dupplicate TI #64052

Nuclide	Activity pCi/l	Acceptable Range
Technetium-99	98.5	79. - 118.
Gross Alpha	22.4	16.8 - 28.
Gross Beta	45.2	35.2 - 55.
Strontium-90	40.	34. - 46.
Total Uranium	1.87	1.5 - 2.2
Cesium-137	75.	53. - 98.
Tritium	1.5 E 03	1.2 - 1.8
Plutonium-239	1.09	0.9 - 1.3

FEB 1997 RECEIVED EDMC

Activity for Matrix Spike Dupplicate TI #64052

Nuclide	Activity pCi/l	Acceptable Range
Technetium-99	98.5	79. - 118.
Gross Alpha	22.4	16.8 - 28.
Gross Beta	45.2	35.2 - 55.
Strontium-90	80.	68. - 92.
Total Uranium	1.87	1.5 - 2.2
Cesium-137	75.	53. - 98.
Tritium	1.5 E 03	1.2 - 1.8
Plutonium-239	1.09	0.9 - 1.3

Contents:

Reports of Analysis		3	Pages
Tc-99	PRO-032-78	3	Pages
Gross Alpha	PRO-032-1	2	Pages
Gross Beta		-	Pages
Sr-90	PRO-032-16, 38	3	Pages
Total U	PRO-032-89	1	Pages
Gamma	PRO-042-5	4	Pages
H-3	PRO-052-35	2	Pages
Pu-238-239	PRO-052-32	6	Pages
C-O-C		1	Pages
Other		-	Pages

CASE NARRATIVE CONTINUED FOR WO # 4-5984

Gross Alpha, Gross Beta:

Spiked water samples analyzed for Alpha and Beta activity can give results which are outside the expected range because the counting situation is different from the self-absorption calibration method.

In calibration, the radioactive standard solutions are evaporated together with varying amounts of sodium carbonate and sodium nitrate salts. The counting results of these standards are used to construct a self-absorption curve which indicates the effective counting efficiency as a function of residue mass. This method gives good results for most water samples.

If a water sample produces a residue which has self-absorption characteristics significantly different from sodium carbonate/sodium nitrate, the calibration curve is not strictly applicable. This results in a bias of the calculated results. The disagreement, therefore is caused by the character of the water sample.

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 06/09/92

WORK ORDER NUMBER	CUSTOMER P.O. NUMBER	DATE RECEIVED	DELIVERY DATE	PAGE 1
4-5984	LL-0850-F4	01/17/92	02/19/92	

MS JOSIE KING
WESTON/WESTINGHOUSE/HANFORD
208 WELSH POOL ROAD
PICKERING CREEK INDUSTRIAL PARK
LIONVILLE PA 19341-1313

W A T E R

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	START TIME	STOP DATE	STOP TIME	NUCLIDE	ACTIVITY (PCI/LITER)	NUCL-UNIT-% U/M *	MID-COUNT TIME DATE	MID-COUNT TIME TIME	VOLUME - UNITS ASH-WGHT-% *	LAB.
64050	9112L829-001	801901	12/14				TC-99	2.2 +-0.1 E 03		02/29			3
							GR-A	L.T. 2. E 00		02/20			3
							GR-B	1.1 +-0.1 E 03		02/20			3
							SR-90	L.T. 6. E-01		03/03			3
							TOTAL U	4.8 +-0.7 E 00	UGM/LITER *	02/14			3
							TOTAL U	L.T. 5. E-02	UGM/LITER *	02/14			3
							GR-A	1.3 +-1.66E 00		02/20			3
							GR-B	L.T. 2. E 00		02/20			3
							TC-99	L.T. 4. E 00		02/29			3
							SR-90	1.0 +-3.61E-01		03/03			3
							BE-7	L.T. 3. E 02		03/15			4
							K-40	L.T. 2. E 02		03/15			4
							MN-54	L.T. 1. E 01		03/15			4
							CO-58	L.T. 2. E 01		03/15			4
							FE-59	L.T. 9. E 01		03/15			4
							CO-60	6.33+-1.25E 01		03/15			4
							ZN-65	L.T. 3. E 01		03/15			4
							ZR-95	L.T. 3. E 01		03/15			4
							RU-103	L.T. 5. E 01		03/15			4
							RU-106	L.T. 1. E 02		03/15			4
							I-131	L.T. 3. E 04		03/15			4
							CS-134	L.T. 1. E 01		03/15			4
							CS-137	L.T. 1. E 01		03/15			4
							BA-140	L.T. 1. E 03		03/15			4
							CE-141	L.T. 1. E 02		03/15			4
							CE-144	L.T. 1. E 02		03/15			4
							RA-226	L.T. 3. E 02		03/15			4
							TH-228	L.T. 2. E 01		03/15			4
							H-3	7.8 +-0.3 E 03		02/08			5
							H-3	L.T. 8.0 E 01		02/08			5
							PU-238	L.T. 6. E-01		05/14			6
							PU-239	L.T. 1. E-01		05/14			6

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CASE NARRATIVE CONTINUED FOR WO # 4-5984

Gross Alpha, Gross Beta:

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In calibration, the radioactive standard solutions are evaporated together with varying amounts of sodium carbonate and sodium nitrate salts. The counting results of these standards are used to construct a self-absorption curve which indicates the effective counting efficiency as a function of residue mass. This method gives good results for most water samples.

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WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page ____ of ____

Client: Weston
Est. Final Proj. Sampling Date:
Work Order #: 61108-02-01
Project Contact/Phone #:
AD Project Manager: Okeng
QC: CLP Del: CLP TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #:
#/Type Container: Liquid / Solid
Volume: Liquid / Solid
Preservatives:

ANALYSES REQUESTED →

ORGANIC							INORG	
VOA	BNA	Pest/PCB	Herb	Rad chem			Metal	CN

WESTON Analytics Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Rad chem	WESTON Analytics Use Only
	B019 D1			W	1/14/91		✓	9112L829-001

Radiochem: Gross Alpha / Beta, Tc-99, Sr-90, Cs-137, Co-60, Pu238, Pu239/240
Total Uranium, Tritium
Rush analysis

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received In Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec'd Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	1/15/92	1300
	[illegible]	1-17-92	1200

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ 381-596a

9713539.1978