UNIVERSITY OF Miami

THE ROSENSTIEL SCHOOL

September 15, 2000

RECEIVED
OCT 17 2000
DOE OVERSIGHT BUREAU

TRITIUM LABORATORY

Data Release #00-101
Job # 1367

NMED-DOE-OB
TRITIUM SAMPLES

Project # HRMB 6.29.00

Dr. James D. Happell
Assistant Research Professor

Distribution:
Michael Dale
NMED-DOE-OB
P.O. Box 1663, MSJ 993
Los Alamos, NM 87545

Rosenstiel School of Marine and Atmospheric Scier
Tritium Laboratory
4600 Rickenbacker Causeway
Miami, Florida 33149-1098
Phone: (305) 361-4100
Fax: (305) 361-4112
email: tritium@rsmas.miami.edu

14247

Revised 12 September 1995

GENERAL COMMENTS ON TRITIUM RESULTS

Tritium Scale (New)

Tritium concentrations are expressed in TU, where 1 TU indicates a T/H ratio of 10^{-18}. The values refer to the new tritium scale of U.S. National Institute of Science and Technology (formerly NBS), and based on their tritium water standard #4926 as measured on 1961/09/03 and again 1978/09/03, and age-corrected with the new half-life of 12.43 years, i.e., $\lambda = 5.576\%$ year^{-1}. In this scale, 1 TU is 7.088 dpm/kg H_2O, or 3.193 pCi/kg H_2O, or 0.1181 Bq/kg H_2O (Bq = disint/sec). TU values are calculated for date of sample collection, REFDATE in the table, as provided by the submitter. If no such date is available, date of sample arrival at our laboratory is used. The stated errors, eTU, are one standard deviation (1 sigma) including all conceivable contributions. In the table, QUANT is quantity of sample received, and ELYS is the amount of water taken for electrolytic enrichment. DIR means direct run (no enrichment).

Through 31 December 1993, we reported tritium values in the "old" scale using the half-life 12.26 years, i.e., $\lambda = 5.65\%$ year^{-1}. In that old scale, 1 TU(old) is 7.186 dpm/kg H_2O, 3.237 pCi/kg H_2O. To convert from the new scale back to the old at any given point in time, multiply the listed TU(new)-values by F, where

$$F = 0.9645 - (\text{year}-1990) \times 0.0008$$

i.e. for 1994 the factor is 0.9613. The formula is correct within 0.02% between 1962 and 1999. To convert data from the old scale to the new, divide by F.

Very low tritium values

In some cases, negative TU values are listed. Such numbers can occur because the net tritium count rate is, in principle the difference between the count rate of the sample and that of a tritium-free sample (background count or blank sample). Given a set of "unknown" samples with no tritium, the distribution of net results should become symmetrical around 0 TU. The negative values are reported as such for the benefit of allowing the user unbiased statistical treatment of sets of the data. For other applications, 0 TU should be used.

Reliability of results

Refer to Services Rendered (Tritium), Section II.8, in the "Tritium Laboratory Price Schedule; Procedures and Standards; Advice on Sampling". Tritium efficiencies and background values are different in the nine counters and values are corrected for cosmic intensity, gas pressure and other parameters. For tritium, the efficiency is typically 1.00 cpm per 100 TU (direct counting). At 50× enrichment, the efficiency is equivalent to 1.00 cpm per 2 TU. The background is about 0.3 cpm, known to about ± 0.02 cpm. Our reported results include not only the Poisson statistics, but also other experimental uncertainties such as enrichment error, etc.

References

Mann, W.B., M.P. Unterweger, and B.M. Coursey, Comments on the NBS tritiated-water standards and their use, *Int. J. Appl. Radiat. Isot.*, 33, 383-386, 1982.

Taylor, C.B., and W. Roether, A uniform scale for reporting low-level tritium measurements in water, *Int. J. Appl. Radiat. Isot.*, *33*, 377-382, 1982.

Client: NMED-DOE-OB
Recvd : 00/08/03
Job# : 1367
Final : 00/09/13

Proj.# 6.29.00

Purchase Order: ON FILE
Contact: M. Dale, 505/672-0449, -0466(F)
P.O. Box 1663, MS J993
Los Alamos, NM 87545

Cust	LABEL INFO	JOB.SX	REFDATE	QUANT	ELYS	TU	eTU
NMED-	PA-6.7	1367.01	000629	1000	223	14.2	0.5
NMED-	PA at TM	1367.02	000629	1000	255	14.5	0.5
NMED-	PA-10.6	1367.03	000629	500	223	11.0	0.4

UNIVERSITY OF Miami

THE ROSENSTIEL SCHOOL

September 15, 2000

TO: Paragon Analytics
Attention: Lance Steere
225 Commerce Drive
Ft. Collins, CO 80514

PAY TO: University of Miami
Tritium Laboratory
4600 Rickenbacker Causeway
Miami, FL 33149
Attention: Dr. James D. Happell

Project # HRMB 6.29.00 — Invoice 1368
U of Miami Vendor Code Y641 — Job # 1367
U of Miami Employer ID# N-59-0624458

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3 Samples, tritium analyses by enrichment and low level proportional counting @ $300.00 each.....$900.00

Rosenstiel School of Marine and Atmospheric Science
Tritium Laboratory
4600 Rickenbacker Causeway
Miami, Florida 33149-1098
Phone: (305) 361-4100
Fax: (305) 361-4112
email: tritium@rsmas.miami.edu

Field Duplicate

		PROJECT	O	O	H	H	DIC	DIC
PA-6.7	6/29/00	6.29	-12.78		-86.00		N/A	N/A
PA@TM	6/29/00	6.29	-12.90		-86.11		N/A	N/A
PA-10.6	6/29/00	6.29	-12.61		-82.75		N/A	N/A

FAX TO MICHAEL DALE
505 672-0466

FAX TO PARAGON
970 490-1522

PARAGON ANALYTICS,
225 Commerce Drive ♦ Fort Collins, CO 80524 ♦ (800) 443-1511 ♦ (970) 490-1511 ♦ FAX (970) 490-1522

RECEIVED
SEP 11 2000
DOE OVERSIGHT BUREAU

September 5, 2000

Mr. Michael Dale
NMED/DOE Oversite Bureau
134 State Road 4, Suite A
White Rock, NM 87544

RE: Paragon Workorder: 00-06-272
Client Project Name: None Submitted
Client Project Number: HRMB 6.29.00

Dear Mr Dale:

Six water samples were received from NMED/DOE Oversite Bureau on June 30, 2000. The samples were scheduled for the following analyses:

Metals	pages 1-25	Gross Alpha/Beta	pages 1-7
Inorganics	pages 1-43	Explosives by HPLC	pages 1-10
Isotopic Uranium	pages 1-7	Gamma Spectroscopy	pages 1-13
PAH's by HPLC	pages 1-10	Total Uranium in Water by KPA	pages 1-5

The results for these analyses are contained in the following reports.

Please note that the TKN's were subbed to Stewart Environmental Consultants and the dioxins/furans were subbed to Alta Analytical.

Thank you for your confidence in Paragon Analytics, Inc. Should you have any questions, please call.

Sincerely,

Paragon Analytics, Inc.
Lance Steere
Senior Project Manager

LRS/mj
Enclosure: Report

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 0006272
Client Name: NMED DOE Oversight Bureau
Client Project Name:
Client Project Number: HRMB 6.29.00
Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
PA-6.7	0006272-1		WATER	6/29/00	8:30
PA-6.7	0006272-2		WATER	6/29/00	8:30
PA at TM	0006272-3		WATER	6/29/00	9:30
PA at TM	0006272-4		WATER	6/29/00	9:30
PA-10.6	0006272-5		WATER	6/29/00	11:10
PA-10.6	0006272-6		WATER	6/29/00	11:10

0006272

Paragon Analytics, Inc.

225 Commerce Drive Fort Collins, CO 80524

800-443-1511 or (970) 490-1511 (970) 490-1522 Fax

Accession Number (LAB ID) _____

Chain-of-Custody

Date 6-29-00 Page 1 of 1

Project Name / No.: _____ Turnaround Time: Standard or Rush (Due _____ (circle one) Dispose or Return to Client (circle one) Sampler _____

Report To: John Young
Phone: 505-827-1558
Fax: ——
Company: NMED-HRMB
Address:
2044 A Galisteo St.
Santa Fe, NM
87505

Bill to HRMB

Sample ID	Date	Time	Lab ID	Matrix *	No. of Containers	VOCs HE (16) OLMO3.0 SW 8260B E 624 E 524.2 (circle one)	~~Oil & Grease~~ (21) PAHs SW 9071A E413.2 (circle one)	~~BTEX (only)~~ (14) SW 8021B Diss'ns Fuels	Non-halogenated Organics GRO DRO SW 8015B (both) (circle one)	~~SVOCs~~ Digests (39) OLMO3.0 SW 8270C E 625 E 525 (circle one) Diss metals B, S, Li	OC Pesticides OLMO3.0 SW 8081A E 608 E 508 (circle one)	PCBs OLMO3.0 SW 8082 E 608 E 508 (circle one)	OP Pesticides SW 8141A E 614 (circle one)	~~Herbicides~~ TDS (85) SW 8151A E 615 (circle one)	~~TCLP Organics~~ (86) TSS SW 1311 8260B 8270C 8081A 8151A (circle)	~~TCLP Metals~~ ~~H~~ (130) SW 1311 6010B-7000 series	Total Metals * (37) ILMO4.0 SW 6010B-7000 series E 200 series (circle)	Dissolved Metals * (37) ILMO4.0 SW 6010B-7000 series E 200 series (circle)	~~Reactive CN/S~~ SW Chapter 8.3	~~Hexavalent Chromium~~ SW 7196A Carb/Bicarb (69)	~~Inorganic Anions~~ * (66) SW 9056 E 300.0 (circle one)	~~TOX~~ Total P SW 9020B (82)	Gross Alpha / Beta Low level SW 9310 E 900.0 (134)	~~Actinides~~ ** PAISOP Total Isotopic U (137)	Total Uranium (113) PAISOP	Tritium (H3) (117) E 906.0 low level	Total Radium SW 9315 E 903.0	Gamma Isotopes * (133) (Specify method under comments)	~~Strontium~~ ** (75) (Specify method under comments)	~~pH~~ TKN (65) SW 9040B / 9045C	NO_2/NO_3 as N (79)	Diss B (31)	Diss S. (31)	Diss. Li (31)
PA-6.7	6/29/00	0830	1/2	W		X	X	X		X				X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
PA at TM	6/29/00	0930	3/4	W		X	X	X		X				X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
PA-10.6	6/29/00	1110	5/6	W			X	X		X				X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
																										NO								

Comments:
(Example: Indicate if TICs are requested for GC/MS VOCs or SVOCs)
Dissolved Metals Bottles labeled as Samples 2,4,6

All other Bottles labeled as samples 1,3,5

Relinquished By: (1)	Relinquished By: (2)	Relinquished By: (3)
Signature: John Young	Signature:	Signature:
Printed Name: John Young	Printed Name: FEDEX	Printed Name:
Date: 6/29/00 Time: 1640	Date: Time:	Date: Time:
Company: NMED	Company:	Company:

Received By: (1)	Received By: (2)	Received By: (3)
Signature:	Signature: Mark Stalk	Signature:
Printed Name: FEDEX	Printed Name: MARK STALK	Printed Name:
Date: Time:	Date: 6-30-00 Time: 0915	Date: Time:
Company:	Company: PAI	Company:

(W) Water; (LQ) Non-aqueous liquid; (Soil) Soil; (NS) Non-soil Solid. ** Indicate specific analytes in "comments". Distribution: white / yellow (Paragon); pink retained by originator.

Paragon Analytics, Inc. -- Fort Collins, Colorado

CONDITION OF SAMPLE UPON RECEIPT FORM

CLIENT: MMED **PROJECT MANAGER:** LS

WORKORDER NO: 0006272 **INITIALS:** m **DATE:** 6-30-00

1. Does this project require any special handling in addition to standard Paragon procedures?		Yes	No
IS PRE-SCREENING REQUIRED? (radiochemistry, DOE, etc.)		Yes	No
2. Are custody seals provided on the cooler? If so, how many 1/cooler	N/A	Yes	No
3. Are the custody seals on sample containers intact?	N/A	Yes	No
4. Is there a Chain-of-Custody (COC) or other representative documents, letters, or shipping memos?		Yes	No
5. Is the COC complete? Relinquished: Yes ✓ No___ Analyses Requested: Yes ✓ No___	N/A	Yes	No
6. Is the COC in agreement with the samples received? No. of Samples: Yes ✓ No___ Sample ID's: Yes ✓ No___ Matrix: Yes ✓ No___ No. of Containers: Yes ✓ No___	N/A	Yes	No
7. Were COC (if applicable) and sample labels legible?		Yes	No
8. Were airbills present and/or removable?		Yes	No
9. Are all aqueous samples requiring chemical preservation preserved correctly (excluding volatile organics)?	N/A	Yes	No
Are all aqueous **non-preserved** samples at the correct pH?		Yes	No
10. Is there enough sample for requested analyses? If so, were samples placed in the proper containers?		Yes	No
11. Are all samples within holding times for the requested analyses?		Yes	No
12. Were all sample containers received intact? (not broken or leaking, etc.)	N/A	Yes	No
13. Are samples requiring no headspace (volatiles, reactive cyanide/sulfide), headspace free? **Size of bubble ___ < green pea; ___ > green pea** (List sample IDs and affected containers on Page 2)	N/A	Yes	No
14. Is Paragon to dispose of samples?		Yes	No
15. Were the sample(s) shipped on ice?	N/A	Yes	No
16. Were cooler temperatures measured at 2 - 6 °C ?	N/A	Yes	No
17. Were all samples cooled that should have been cooled?		Yes	No

Cooler #'s 1 2 3 ___ ___ ___

Temperature 6°C 4°C 4°C ___ ___ ___ °C

Project Manager Signature / Date: [signature] 7/5

A NO RESPONSE TO ANY QUESTION (EXCEPT # 1 and #14 REQUIRES THE COMPLETION OF PAGE 2 OF THIS FORM

Paragon Analytics, Inc. -- Fort Collins, Colorado

CONDITION OF SAMPLE UPON RECEIPT FORM

CLIENT: UMED **PROJECT MANAGER:** CS

WORKORDER NO: 0W6272 **INITIALS:** NL **DATE:** 6-30-00

- ☐ Custody seals on outside of shipping container broken.
- ☐ Custody seals on sample containers were broken.
- ☐ No Chain-of-Custody (COC) present.
- ☐ Number of samples on the COC do not match the number of samples received.
- ☐ Aqueous samples not preserved correctly (see pH discussion below).
- ☐ Samples received at inappropriate temperature.
- ☐ Insufficient sample to perform requested analyses.
- ☐ Extraction or analytical holding times expired in transit.
- ☒ Broken/leaking bottles and intact bottles received in same cooler (list affected sample IDs below)
- ☐ No analyses requested.
- ☐ Incorrect sample type received.
- ☐ VOAs not headspace free (list sample IDs and affected vials below)
- ☐ Airbills not present and/or removable (record applicable shipper's tracking number below)
- ☐ Other

Describe discrepancy:

1 of 2 1.0L AMBER BOTTLES Received Broken for Client Sample PA@TM

Was the client contacted? ___ No; ✓ Yes: Name MAD, J. Young Date/Time left message 7/5

Was the pH of any sample adjusted by the laboratory? ___ No; ___ Yes (see Table below):

NOTE: No pH adjustments are to be made without prior consent of Project Manager.

Sample ID	*Initial pH*	*Final pH*	*Type of Reagent Used*	*Lot No. of Reagent Used*	*Initials / Date*

Project Manager Signature / Date: 7/5

45

100

FedEx *USA Airbill* FedEx Tracking Number 8157 3793 6176

SDA21

Form I.D. No. 0215

RECIPIENT: PEEL HERE

1 From This portion can be removed for Recipient's records.

Date 6-3-00 FedEx Tracking Number 815737936176

Sender's Name John Young Phone 505 672-0443

Company NEW MEXICO ENVIRONMENT SVCS

Address 134 STATE ROAD 4 STE A Dept./Floor/Suite/Room

City WHITE ROCK State NM ZIP 87544

2 Your Internal Billing Reference

3 To Recipient's Name Lance Shoare Phone ~~505~~ 800 443-1511

Company Paragon Analytics, Inc

Address 225 Commerce Drive

We cannot deliver to PO boxes or PO ZIP codes. Dept./Floor/Suite/Room

To 'HOLD' at FedEx location, print FedEx address here

City Ft. Collins State CO ZIP 80524

8157 3793 6176

0113701579

4a Express Package Service — **Packages up to 150 lbs.** Delivery commitment may be later in some areas

- [x] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day* — Second business day
- [ ] FedEx Express Saver* — Third business day

* FedEx Letter Rate not available. Minimum charge: One-pound rate

4b Express Freight Service — **Packages over 150 lbs.** Delivery commitment may be later in some areas

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation:

5 Packaging — * Declared value limit $500

- [ ] FedEx Letter*
- [ ] FedEx Pak*
- [x] Other Pkg. — Includes FedEx Box, FedEx Tube, and customer pkg

6 Special Handling

- [ ] **Saturday Delivery** — Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] **Sunday Delivery** — Available for FedEx Priority Overnight to select ZIP codes
- [ ] **HOLD Weekday** at FedEx Location — Not available with FedEx First Overnight
- [ ] **HOLD Saturday** at FedEx Location — Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods?

- [x] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous Goods cannot be shipped in FedEx packaging

7 Payment **Bill to:**

- [ ] Sender — Acct. No. in Section 1 will be billed
- [x] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Total Packages	Total Weight	Total Charges
3	142	Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the *FedEx Service Guide* for details.

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STEWART ENVIRONMENTAL CONSULTANTS, INC.
Consulting Engineers and Scientists

Office & Laboratory:
3801 Automation Way, Suite 200
Fort Collins, Colorado 80525
(970) 226-5500
FAX (970) 226-4946
stewart@webaccess.net

July 25, 2000

Mr. Lance Steere
Paragon Analytics, Inc.
225 Commerce Drive
Fort Collins, Colorado 80524

Subject: Laboratory Testing Results
Job No.: 720-025

Dear Mr. Steere:

Please find enclosed laboratory testing results for the samples received at our laboratory on July 11, 2000.

We appreciate the opportunity to provide these analytical services and look forward to working with you in the future. If you have any questions regarding this report, do not hesitate to contact us.

Sincerely,

STEWART ENVIRONMENTAL CONSULTANTS, INC.

Richard G. Patterson, PE
Operations Manager

Enc.

25jul00.la3

RESULTS FOR TKN AS N

Client Name: Paragon Analytics, Inc.
Project No.: 720-025
Date Received: 07/11/00
Analyst: EGM
Method No.: 4500Norg B/2

SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE NUMBER	TESTED VALUE	DETECT LIMIT	DATE OF ANALYSIS
PA6.7, 0006272-1	06/29/00	3967	14.3	2.5	07/20/00
PA at TM, 0006272-3	06/29/00	3968	14.2	2.5	07/20/00
PA-10.6, 0006272-5	06/29/00	3969	5.3	0.5	07/20/00

Values are reported in parts per million (ppm) unless otherwise noted.
ND = Not Detected

/2 Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992

STEWART ENVIRONMENTAL CONSULTANTS, INC.
LABORATORY QUALITY CONTROL REPORT

Total Kjeldahl Nitrogen (TKN) as Nitrogen
EPA 351.1

Client Name	Paragon Analytics, Inc.
Client Project Number	0006272-1,3,5
Sample Date	June 15, 2000
Date Received	July 11, 2000
Lab Sample Numbers	003967 - 003969
Date of Analysis	July 20, 2000
Sample Matrix	Water
Dilution Factor	1:5 for 003967 and 003968, 1 for 003969
Standard Range	0.50 - 50.0 ppm
Detection Limit	2.5 ppm for 003967 and 003968, 0.50 ppm for 003969

Blank	
Tested Values (ppm)	QC Acceptance Limit
< 0.50	< 0.50

Duplicate			
Tested Values (ppm)		RPD	QC Acceptance Limit RPD
0.7	0.8	13.3	< 20

Independent Reference Material		
Tested Value (ppm)	Reference Value (ppm)	Confidence Interval (ppm)
7.14	6.74	6.07 - 7.41

Spike		
Spike Amount	Percent Recovery	QC Acceptance Limits
10	104.2	80 - 120

ARAMETER TKN

STEWART ENVIRONMENTAL CONSULTANTS

COPY

ANALYST Em

THOD NUMBER:

% TRANS

TA SHEET

DATE OF ANALYSIS 7-20-02

WAVE LENGTH

mple ate 002	TEST Number	SAMPLE Number	Sample Identification	DISTILL DATE	SAMPLE Volume (mls)	MV or %Trans	ABSORB	DILUTION	CONCENTRATION
	218593		Blank		50	177.7			-0.9989 cc
	4		0.5			135.8	-0.8010		2.0191 b
	5		1.0			118.3	0.000		-0.0170 slp
	6		5.0			76.9	0.6890		m = -0.0171
	7		10.0			59.8	1.000		cc = 0.9999
	8		50.0			18.8	1.6990		b = 2.0191
	9		Blank	7-19		149.2			0.29
	600		9990 ERA			68.2			7.14
15	1	3960	720-025	7-17		106.8		—	1.56
	2	3961				140.5		—	0.42
	3	3962				123.8		—	0.80
	4	3963				122.0		—	0.86
	5	3964		7-18		125.1		—	0.76
	6	3964	dup			128.8		—	0.66 86%
	7	3964	10.0 Spike			56.8		—	11.18
	8	3965				130.6		—	0.61
	9	3966				104.5		—	1.71
29	10	3967				91.4		1:5	14.3
	1	3968		7-19		91.6		1:5	14.2
	2	3969				75.6		—	5.3
	3		5.0			75.5		—	5.4
	4		Blank			183.2		—	ND

Paragon Analytics, Inc.

METALS CASE NARRATIVE

NMED DOE Oversight Bureau

HRMB 6.29.00

Order Number - 0006272

1. This report consists of 3 water samples for both total recoverable and dissolved metals.
2. The samples were received cool and intact on 06/30/00.
3. The total recoverable samples had been preserved for the requested analyses. The dissolved samples had been filtered and preserved prior to receipt.
4. The samples were prepared for analysis based on SW-846, 3rd Edition procedures.

   For analysis by Trace and conventional ICPs, the samples were digested following method 3005A and PAI SOP 806 Rev. 5.

   For analysis by Cold Vapor AA (CVAA), the samples were digested following method 7470A and PAI SOP 812 Rev. 6.
5. The samples were analyzed following SW-846, 3rd Edition procedures.

   Analysis by Trace ICP followed method 6010B and PAI SOP 807 Rev. 4.

   The relationship between intensity and concentration for each element is established using at least four standards, one of which is a blank solution. The equation which relates intensity to concentration is:

$$I = A_0 + (A_1 * c^n) + (A_2 * c^{2n})$$

where: I = intensity
c = concentration
A_0 = offset coefficient
A_1 = gain coefficient
A_2 = curvature coefficient
n = exponent coefficient

During sample analysis concentrations are computed by the software and the results are printed in mg/L. The instrument software does not provide a printout which gives both intensity and concentration. The validity of the calibration equation is tested by analyzing the following solutions: a blank, a

low level check solution with concentrations near the reporting limit, an Initial Calibration Verification (ICV) standard from a 2nd source standard solution with concentrations near the middle of the analytical range, a Continuing Calibration Verification (CCV) standard with concentrations at two times those in the ICV, and a readback of the highest calibration standard.

These solutions provide verification that the calibration equations are functioning properly throughout the analytical range of the instrument. During sample analysis dilutions are made for analytes found at concentrations above the highest calibration standard. No results are taken from extrapolations beyond the highest standard.

Analysis by conventional ICP followed method 6010B and PAI SOP 805 Rev. 1.

Calibration of the conventional ICP is performed as described above for the Trace ICP.

Analysis by CVAA followed method 7470A and PAI SOP 812 Rev. 6.

The relationship between intensity and concentration is determined daily, prior to sample analysis. At least five standards and a blank solution are analyzed to establish the calibration curve. The instrument software performs a linear regression to fit the calibration data to a curve of the form:

$$\text{conc.} = B * I + C$$

where: conc. = concentration
B = slope coefficient
I = intensity
C = intercept coefficient

A printout summarizing the calibration data supplies the calibration curve and correlation coefficient. During sample analysis both intensity and concentration values are printed. Dilutions are made for concentrations above the highest calibration standard. No results are taken from extrapolations above the highest standard.

6. All standards and solutions are NIST traceable and were used within their recommended shelf life.

7. The samples were prepared and analyzed within the established hold times.

All in house quality control procedures were followed, as described below.

8. General quality control procedures.

- A preparation (method) blank and laboratory control sample were digested and analyzed with the samples in each digestion batch. There were not more than 20 samples in each digestion batch.
- The preparation (method) blank results associated with each batch were below the reporting limits for the requested analytes. This indicates that no contaminants were introduced to the samples during the digestion procedure.

- The laboratory control sample associated with each batch was within the acceptance limits. This indicates complete digestion according to the method.
- All initial and continuing calibration blanks associated with each batch were below the reporting limits for the requested analytes. This indicates a valid calibration and stable instrument conditions.
- All initial and continuing calibration verifications associated with each batch were within the acceptance criteria for the requested analytes. This indicates a valid calibration and stable instrument conditions.
- The interference check samples, and high standard readbacks associated with Method 6010B analyses were within acceptance criteria.

9. PAI sample ID 0006272-1 was designated as the QC sample for the ICP analyses. PAI sample ID 0006275-1 was designated as the QC sample for the mercury analysis.

   - A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
   - Matrix spike recoveries could not be evaluated for the following analyte.

Analyte	Sample ID
Silicon	0006272-1

     The concentration of this analyte in the native sample was greater than 4 times the concentration of matrix spike added during the digestion. When sample concentration is that much greater than the spike added, spike recoveries may not be accurate. The laboratory control sample indicates that the digestion and analysis were in control.
   - A sample duplicate and spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
   - A serial dilution was analyzed with each ICP batch. All acceptance criteria were met.

10. Sample dilutions were not required for the requested analyses.

The data contained in the following report have been reviewed and approved by the personnel listed below:

Darryl Patrick — 7/24/00

Darryl Patrick
Senior Inorganic Chemist

Date

SW — 7/24/00

Reviewer's Initials

Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 0006272
Client Name: NMED DOE Oversight Bureau
Client Project Name:
Client Project Number: HRMB 6.29.00
Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
PA-6.7	0006272-1		WATER	6/29/00	8:30
PA-6.7	0006272-2		WATER	6/29/00	8:30
PA at TM	0006272-3		WATER	6/29/00	9:30
PA at TM	0006272-4		WATER	6/29/00	9:30
PA-10.6	0006272-5		WATER	6/29/00	11:10
PA-10.6	0006272-6		WATER	6/29/00	11:10

Inorganic Data Reporting Qualifiers

The following qualifiers are used by the laboratory when reporting results of inorganic analyses.

- Result qualifier -- If the analyte was analyzed for but not detected a "U" is entered.
- QC qualifier -- Specified entries and their meanings are as follows:

  E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

  M - Duplicate injection precision was not met.

  N - Spiked sample recovery not within control limits. A post spike is analyzed for all 6010B analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than 4 times the spike added concentration.

  * - Duplicate analysis (relative percent difference) not within control limits.

Total Recoverable ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-6.7
Lab ID: 0006272-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 10-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IT000710-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: TS00710

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	0.2	0.2	U	
7440-36-0	ANTIMONY	1	0.02	0.02	U	
7440-38-2	ARSENIC	1	0.01	0.01	U	
7440-39-3	BARIUM	1	0.19	0.1		
7440-41-7	BERYLLIUM	1	0.005	0.005	U	
7440-43-9	CADMIUM	1	0.005	0.005	U	
7440-70-2	CALCIUM	1	60	1		
7440-47-3	CHROMIUM	1	0.01	0.01	U	
7440-48-4	COBALT	1	0.01	0.01	U	
7440-50-8	COPPER	1	0.01	0.01	U	
7439-89-6	IRON	1	0.13	0.1		
7439-92-1	LEAD	1	0.003	0.003	U	
7439-95-4	MAGNESIUM	1	14	1		
7439-96-5	MANGANESE	1	0.31	0.01		
7440-02-0	NICKEL	1	0.02	0.02	U	
7440-09-7	POTASSIUM	1	13	1		
7782-49-2	SELENIUM	1	0.005	0.005	U	
7440-22-4	SILVER	1	0.01	0.01	U	
7440-23-5	SODIUM	1	6	1		
7440-28-0	THALLIUM	1	0.01	0.01	U	
7440-62-2	VANADIUM	1	0.01	0.01	U	
7440-66-6	ZINC	1	0.02	0.02	U	

Data Package ID: *IT0006272-1*

Total Recoverable ICP Metals

Method SW6010
Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA at TM
Lab ID: 0006272-3

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 10-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IT000710-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: TS00710

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	39	0.2		
7440-36-0	ANTIMONY	1	0.02	0.02	U	
7440-38-2	ARSENIC	1	0.014	0.01		
7440-39-3	BARIUM	1	1.3	0.1		
7440-41-7	BERYLLIUM	1	0.005	0.005	U	
7440-43-9	CADMIUM	1	0.005	0.005	U	
7440-70-2	CALCIUM	1	99	1		
7440-47-3	CHROMIUM	1	0.022	0.01		
7440-48-4	COBALT	1	0.015	0.01		
7440-50-8	COPPER	1	0.047	0.01		
7439-89-6	IRON	1	26	0.1		
7439-92-1	LEAD	1	0.058	0.003		
7439-95-4	MAGNESIUM	1	17	1		
7439-96-5	MANGANESE	1	3	0.01		
7440-02-0	NICKEL	1	0.039	0.02		
7440-09-7	POTASSIUM	1	23	1		
7782-49-2	SELENIUM	1	0.0098	0.005		
7440-22-4	SILVER	1	0.01	0.01	U	
7440-23-5	SODIUM	1	11	1		
7440-28-0	THALLIUM	1	0.01	0.01	U	
7440-62-2	VANADIUM	1	0.046	0.01		
7440-66-6	ZINC	1	0.16	0.02		

Data Package ID: *IT0006272-1*

Total Recoverable ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-10.6
Lab ID: 0006272-5

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 10-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IT000710-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: TS00710

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	35	0.2		
7440-36-0	ANTIMONY	1	0.02	0.02	U	
7440-38-2	ARSENIC	1	0.016	0.01		
7440-39-3	BARIUM	1	1.2	0.1		
7440-41-7	BERYLLIUM	1	0.005	0.005	U	
7440-43-9	CADMIUM	1	0.005	0.005	U	
7440-70-2	CALCIUM	1	99	1		
7440-47-3	CHROMIUM	1	0.019	0.01		
7440-48-4	COBALT	1	0.014	0.01		
7440-50-8	COPPER	1	0.044	0.01		
7439-89-6	IRON	1	22	0.1		
7439-92-1	LEAD	1	0.052	0.003		
7439-95-4	MAGNESIUM	1	17	1		
7439-96-5	MANGANESE	1	3	0.01		
7440-02-0	NICKEL	1	0.039	0.02		
7440-09-7	POTASSIUM	1	22	1		
7782-49-2	SELENIUM	1	0.0061	0.005		
7440-22-4	SILVER	1	0.01	0.01	U	
7440-23-5	SODIUM	1	10	1		
7440-28-0	THALLIUM	1	0.01	0.01	U	
7440-62-2	VANADIUM	1	0.043	0.01		
7440-66-6	ZINC	1	0.16	0.02		

Data Package ID: *IT0006272-1*

Dissolved ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-6.7
Lab ID: 0006272-2

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 10-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IT000710-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: TS00710

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	0.2	0.2	U	
7440-36-0	ANTIMONY	1	0.02	0.02	U	
7440-38-2	ARSENIC	1	0.01	0.01	U	
7440-39-3	BARIUM	1	0.19	0.1		
7440-41-7	BERYLLIUM	1	0.005	0.005	U	
7440-43-9	CADMIUM	1	0.005	0.005	U	
7440-70-2	CALCIUM	1	55	1		
7440-47-3	CHROMIUM	1	0.01	0.01	U	
7440-48-4	COBALT	1	0.01	0.01	U	
7440-50-8	COPPER	1	0.01	0.01	U	
7439-89-6	IRON	1	0.1	0.1	U	
7439-92-1	LEAD	1	0.003	0.003	U	
7439-95-4	MAGNESIUM	1	12	1		
7439-96-5	MANGANESE	1	0.47	0.01		
7440-02-0	NICKEL	1	0.02	0.02	U	
7440-09-7	POTASSIUM	1	16	1		
7782-49-2	SELENIUM	1	0.005	0.005	U	
7440-22-4	SILVER	1	0.01	0.01	U	
7440-23-5	SODIUM	1	9.3	1		
7440-28-0	THALLIUM	1	0.01	0.01	U	
7440-62-2	VANADIUM	1	0.01	0.01	U	
7440-66-6	ZINC	1	0.024	0.02		

Data Package ID: *IT0006272-1*

Dissolved ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA at TM
Lab ID: 0006272-4

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 10-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IT000710-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: TS00710

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	0.54	0.2		
7440-36-0	ANTIMONY	1	0.02	0.02	U	
7440-38-2	ARSENIC	1	0.01	0.01	U	
7440-39-3	BARIUM	1	0.2	0.1		
7440-41-7	BERYLLIUM	1	0.005	0.005	U	
7440-43-9	CADMIUM	1	0.005	0.005	U	
7440-70-2	CALCIUM	1	56	1		
7440-47-3	CHROMIUM	1	0.01	0.01	U	
7440-48-4	COBALT	1	0.01	0.01	U	
7440-50-8	COPPER	1	0.01	0.01	U	
7439-89-6	IRON	1	0.35	0.1		
7439-92-1	LEAD	1	0.003	0.003	U	
7439-95-4	MAGNESIUM	1	12	1		
7439-96-5	MANGANESE	1	0.49	0.01		
7440-02-0	NICKEL	1	0.02	0.02	U	
7440-09-7	POTASSIUM	1	16	1		
7782-49-2	SELENIUM	1	0.0052	0.005		
7440-22-4	SILVER	1	0.01	0.01	U	
7440-23-5	SODIUM	1	9.2	1		
7440-28-0	THALLIUM	1	0.01	0.01	U	
7440-62-2	VANADIUM	1	0.01	0.01	U	
7440-66-6	ZINC	1	0.02	0.02	U	

Data Package ID: *IT0006272-1*

Dissolved ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID:	PA-10.6
Lab ID:	0006272-6

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 10-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IT000710-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: TS00710

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	0.2	0.2	U	
7440-36-0	ANTIMONY	1	0.02	0.02	U	
7440-38-2	ARSENIC	1	0.01	0.01	U	
7440-39-3	BARIUM	1	0.19	0.1		
7440-41-7	BERYLLIUM	1	0.005	0.005	U	
7440-43-9	CADMIUM	1	0.005	0.005	U	
7440-70-2	CALCIUM	1	60	1		
7440-47-3	CHROMIUM	1	0.01	0.01	U	
7440-48-4	COBALT	1	0.01	0.01	U	
7440-50-8	COPPER	1	0.01	0.01	U	
7439-89-6	IRON	1	0.11	0.1		
7439-92-1	LEAD	1	0.003	0.003	U	
7439-95-4	MAGNESIUM	1	14	1		
7439-96-5	MANGANESE	1	0.31	0.01		
7440-02-0	NICKEL	1	0.02	0.02	U	
7440-09-7	POTASSIUM	1	13	1		
7782-49-2	SELENIUM	1	0.005	0.005	U	
7440-22-4	SILVER	1	0.01	0.01	U	
7440-23-5	SODIUM	1	6	1		
7440-28-0	THALLIUM	1	0.01	0.01	U	
7440-62-2	VANADIUM	1	0.01	0.01	U	
7440-66-6	ZINC	1	0.02	0.02	U	

Data Package ID: *IT0006272-1*

Dissolved ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-6.7
Lab ID: 0006272-2

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 12-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IP000712-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: IS00712

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	0.1	0.1	U	
7439-93-2	LITHIUM	1	0.01	0.01	U	
7440-21-3	SILICON	1	6.4	0.05		

Data Package ID: *IP0006272-1*

Dissolved ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID:	PA at TM
Lab ID:	0006272-4

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 12-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IP000712-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: IS00712

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	0.1	0.1	U	
7439-93-2	LITHIUM	1	0.01	0.01	U	
7440-21-3	SILICON	1	6.8	0.05		

Data Package ID: *IP0006272-1*

Dissolved ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-10.6
Lab ID: 0006272-6

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 12-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IP000712-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: IS00712

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	0.1	0.1	U	
7439-93-2	LITHIUM	1	0.01	0.01	U	
7440-21-3	SILICON	1	9.7	0.05		

Data Package ID: *IP0006272-1*

Dissolved MERCURY

Method SW7470

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 20 G
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-2	6/29/2000	7/10/2000	07/10/2000	N/A	1	0.0002	0.0002	U	20 G
PA at TM	0006272-4	6/29/2000	7/10/2000	07/10/2000	N/A	1	0.0002	0.0002	U	20 G
PA-10.6	0006272-6	6/29/2000	7/10/2000	07/10/2000	N/A	1	0.0002	0.0002	U	20 G

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *HG0006272-1*

Total Recoverable MERCURY

Method SW7470

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 20 G
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-1	6/29/2000	7/10/2000	07/10/2000	N/A	1	0.0002	0.0002	U	20 G
PA at TM	0006272-3	6/29/2000	7/10/2000	07/10/2000	N/A	1	0.0002	0.0002	U	20 G
PA-10.6	0006272-5	6/29/2000	7/10/2000	07/10/2000	N/A	1	0.0002	0.0002	U	20 G

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *HG0006272-1*

ICP Metals

Method SW6010

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: IP000710-1MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/10/2000
Date Analyzed: 07/10/2000

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IT000710-1A1
Cleanup: NONE
Basis: N/A

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: TS00710

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	0.2	0.2	U	
7440-36-0	ANTIMONY	1	0.02	0.02	U	
7440-38-2	ARSENIC	1	0.01	0.01	U	
7440-39-3	BARIUM	1	0.1	0.1	U	
7440-41-7	BERYLLIUM	1	0.005	0.005	U	
7440-43-9	CADMIUM	1	0.005	0.005	U	
7440-70-2	CALCIUM	1	1	1	U	
7440-47-3	CHROMIUM	1	0.01	0.01	U	
7440-48-4	COBALT	1	0.01	0.01	U	
7440-50-8	COPPER	1	0.01	0.01	U	
7439-89-6	IRON	1	0.1	0.1	U	
7439-92-1	LEAD	1	0.003	0.003	U	
7439-95-4	MAGNESIUM	1	1	1	U	
7439-96-5	MANGANESE	1	0.01	0.01	U	
7440-02-0	NICKEL	1	0.02	0.02	U	
7440-09-7	POTASSIUM	1	1	1	U	
7782-49-2	SELENIUM	1	0.005	0.005	U	
7440-22-4	SILVER	1	0.01	0.01	U	
7440-23-5	SODIUM	1	1	1	U	
7440-28-0	THALLIUM	1	0.01	0.01	U	
7440-62-2	VANADIUM	1	0.01	0.01	U	
7440-66-6	ZINC	1	0.02	0.02	U	

Data Package ID: *IT0006272-1*

ICP Metals

Method SW6010

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-6.7
LabID: 0006272-1MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 10-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IT000710-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7429-90-5	ALUMINUM	0.2	U	2.18		0.2	2	109	80 - 120%
7440-36-0	ANTIMONY	0.02	U	0.517		0.02	0.5	104	80 - 120%
7440-38-2	ARSENIC	0.01	U	2.17		0.01	2	108	80 - 120%
7440-39-3	BARIUM	0.19		2.13		0.1	2	97	80 - 120%
7440-41-7	BERYLLIUM	0.005	U	0.0518		0.005	0.05	104	80 - 120%
7440-43-9	CADMIUM	0.005	U	0.0489		0.005	0.05	98	80 - 120%
7440-70-2	CALCIUM	60		101		1	40	102	80 - 120%
7440-47-3	CHROMIUM	0.01	U	0.198		0.01	0.2	99	80 - 120%
7440-48-4	COBALT	0.01	U	0.507		0.01	0.5	102	80 - 120%
7440-50-8	COPPER	0.01	U	0.257		0.01	0.25	103	80 - 120%
7439-89-6	IRON	0.13		0.964		0.1	1	83	80 - 120%
7439-92-1	LEAD	0.003	U	0.495		0.003	0.5	99	80 - 120%
7439-95-4	MAGNESIUM	14		55.7		1	40	103	80 - 120%
7439-96-5	MANGANESE	0.31		0.796		0.01	0.5	97	80 - 120%
7440-02-0	NICKEL	0.02	U	0.508		0.02	0.5	102	80 - 120%
7440-09-7	POTASSIUM	13		51.5		1	40	96	80 - 120%
7782-49-2	SELENIUM	0.005	U	2.08		0.005	2	104	80 - 120%
7440-22-4	SILVER	0.01	U	0.0509		0.01	0.05	102	80 - 120%
7440-23-5	SODIUM	6		44.9		1	40	97	80 - 120%
7440-28-0	THALLIUM	0.01	U	2		0.01	2	100	80 - 120%
7440-62-2	VANADIUM	0.01	U	0.502		0.01	0.5	100	80 - 120%
7440-66-6	ZINC	0.02	U	0.497		0.02	0.5	99	80 - 120%

Data Package ID: *IT0006272-1*

ICP Metals

Method SW6010

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-6.7
LabID: 0006272-1MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 10-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IT000710-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L

MSD Lab ID: 0006272-1MSD

CASNO	Target Analyte	Spike Added	MSD Result	MSD Qual	Reporting Limit	MSD % Rec.	RPD	RPD Limits
7429-90-5	ALUMINUM	2	2.2		0.2	110	1	20
7440-36-0	ANTIMONY	0.5	0.523		0.02	105	1	20
7440-38-2	ARSENIC	2	2.22		0.01	111	2	20
7440-39-3	BARIUM	2	2.15		0.1	98	1	20
7440-41-7	BERYLLIUM	0.05	0.0521		0.005	104	1	20
7440-43-9	CADMIUM	0.05	0.0495		0.005	99	1	20
7440-70-2	CALCIUM	40	101		1	101	0	20
7440-47-3	CHROMIUM	0.2	0.2		0.01	100	1	20
7440-48-4	COBALT	0.5	0.513		0.01	103	1	20
7440-50-8	COPPER	0.25	0.258		0.01	103	0	20
7439-89-6	IRON	1	0.964		0.1	83	0	20
7439-92-1	LEAD	0.5	0.496		0.003	99	0	20
7439-95-4	MAGNESIUM	40	55.6		1	103	0	20
7439-96-5	MANGANESE	0.5	0.798		0.01	98	0	20
7440-02-0	NICKEL	0.5	0.511		0.02	102	1	20
7440-09-7	POTASSIUM	40	51.5		1	96	0	20
7782-49-2	SELENIUM	2	2.1		0.005	105	1	20
7440-22-4	SILVER	0.05	0.0515		0.01	103	1	20
7440-23-5	SODIUM	40	45		1	98	0	20
7440-28-0	THALLIUM	2	2.01		0.01	101	1	20
7440-62-2	VANADIUM	0.5	0.505		0.01	101	1	20
7440-66-6	ZINC	0.5	0.502		0.02	100	1	20

Data Package ID: *IT0006272-1*

ICP Metals

Method SW6010
Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: IP000710-1MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/10/2000
Date Analyzed: 07/12/2000

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IP000712-1A1
Cleanup: NONE
Basis: N/A

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: IS00712

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	0.1	0.1	U	
7439-93-2	LITHIUM	1	0.01	0.01	U	
7440-21-3	SILICON	1	0.05	0.05	U	

Data Package ID: *IP0006272-1*

ICP Metals

Method SW6010

Blank Spike

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: IP000710-1LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/10/2000
Date Analyzed: 07/12/2000

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IP000712-1A1
Cleanup: NONE
Basis: N/A

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7440-21-3	SILICON	2	1.88	0.05		94	80 - 120%

Data Package ID: *IP0006272-1*

ICP Metals

Method SW6010

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-6.7
LabID: 0006272-1MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 12-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IP000712-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-42-8	BORON	0.1	U	1.01		0.1	1	101	80 - 120%
7439-93-2	LITHIUM	0.01	U	0.501		0.01	0.5	100	80 - 120%
7440-21-3	SILICON	9.6		11.6		0.05	2	100	80 - 120%

MSD Lab ID: 0006272-1MSD

CASNO	Target Analyte	Spike Added	MSD Result	MSD Qual	Reporting Limit	MSD % Rec.	RPD	RPD Limits
7440-42-8	BORON	1	1.04		0.1	104	3	20
7439-93-2	LITHIUM	0.5	0.501		0.01	100	0	20
7440-21-3	SILICON	2	11.5		0.05	95	1	20

Data Package ID: *IP0006272-1*

Mercury

Method SW7470

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: HG000710-1MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/10/2000
Date Analyzed: 07/10/2000

Prep Batch: HG000710-1
QCBatchID: HG000710-1-2
Run ID: HG000710-1A1
Cleanup: NONE
Basis: N/A

Sample Aliquot: 20 G
Final Volume: 20 G
Result Units: MG/L
File Name: 0710WATR

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7439-97-6	MERCURY	1	0.0002	0.0002	U	

Data Package ID: *HG0006272-1*

Mercury

Method SW7470

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: SHARED QC
LabID: 0006275-2MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 19-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 10-Jul-00

Prep Batch: HG000710-1
QCBatchID: HG000710-1-2
Run ID: HG000710-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 20 G
Final Volume: 20 G
Result Units: MG/L

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7439-97-6	MERCURY	0.0002	U	0.00207		0.0002	0.002	104	80 - 120%

MSD Lab ID: 0006275-2MSD

CASNO	Target Analyte	Spike Added	MSD Result	MSD Qual	Reporting Limit	MSD % Rec.	RPD	RPD Limits
7439-97-6	MERCURY	0.002	0.00204		0.0002	102	2	20

Data Package ID: *HG0006272-1*

PARAGON
ANALYTICS, INC.
AN EMPLOYEE OWNED SMALL BUSINESS

225 Commerce Drive Fort Collins, Colorado 80524 (800) 443-1511

Message

Phone (970) 490-1511
Fax (970) 490-1522

Re: HRMB 6.29.00 results

Anions and wetchem results are attached...

To	Michael Dale	Company	NMED OB
Fax No.	(505) 672-0466	Date	8/4/00
From	Lance Steere	Total Pages	13

If you do not receive all the pages, plea se call us back as soon as possible.

BICARBONATE AS CACO3

Method EPA310.1

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 50 ML
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-1	6/29/2000	7/10/2000	07/10/2000	N/A	1	170	10		50 ML
PA at TM	0006272-3	6/29/2000	7/10/2000	07/10/2000	N/A	1	180	10		50 ML
PA-10.6	0006272-6	6/29/2000	7/10/2000	07/10/2000	N/A	1	190	10		50 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *AK0006272-1*

CARBONATE AS CACO3

Method EPA310.1

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 50 ML
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-1	6/29/2000	7/10/2000	07/10/2000	N/A	1	10	10	U	50 ML
PA at TM	0006272-3	6/29/2000	7/10/2000	07/10/2000	N/A	1	10	10	U	50 ML
PA-10.6	0006272-5	6/29/2000	7/10/2000	07/10/2000	N/A	1	10	10	U	50 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *AK0006272-1*

AMMONIA

Method EPA350.3

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 10 ML
Matrix: WATER
Result Units: mg/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-1	6/29/2000	7/7/2000	07/07/2000	N/A	1	0.5	0.5	U	10 ML
PA at TM	0006272-3	6/29/2000	7/7/2000	07/07/2000	N/A	1	0.5	0.5	U	10 ML
PA-19.6	0006272-5	6/29/2000	7/7/2000	07/07/2000	N/A	1	0.54	0.5		10 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *NH0006272-1*

CYANIDE, TOTAL

Method SW9010

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 50 ML
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-1	6/29/2000	7/10/2000	07/10/2000	N/A	1	0.019	0.01		50 ML
PA at TM	0006272-3	6/29/2000	7/10/2000	07/10/2000	N/A	1	0.015	0.01		50 ML
PA-10.6	0006272-5	6/29/2000	7/10/2000	07/10/2000	N/A	1	0.015	0.01		50 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *CN0006272-1*

NITRATE/NITRITE

Method EPA353.3

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 3 ML
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-1	6/29/2000	7/20/2000	07/22/2000	N/A	2	1	0.1		3 ML
PA at TM	0006272-3	6/29/2000	7/20/2000	07/22/2000	N/A	2	0.67	0.1		3 ML
PA-10.0	0006272-5	6/29/2000	7/20/2000	07/22/2000	N/A	2	0.49	0.1		3 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *NN0006272-1*

TOTAL PHOSPHORUS

Method EPA365.2

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 50 ML
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-1	6/29/2000	7/12/2000	07/12/2000	N/A	1	0.51	0.05		50 ML
PA at TM	0006272-3	6/29/2000	7/12/2000	07/12/2000	N/A	5	0.92	0.25		50 ML
PA-10.6	0006272-5	6/29/2000	7/12/2000	07/12/2000	N/A	1	0.84	0.05		50 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *PO0006272-1*

TOTAL DISSOLVED SOLIDS

Method EPA160.1

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 25 ML
Matrix: WATER
Result Units: mg/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-1	6/29/2000	7/5/2000	07/06/2000	N/A	1	620	80		25 ML
PA at TM	0006272-3	6/29/2000	7/5/2000	07/06/2000	N/A	1	580	80		25 ML
PA-10.0	0006272-5	6/29/2000	7/5/2000	07/06/2000	N/A	1	410	20		100 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *TD0006272-1*

TOTAL SUSPENDED SOLIDS

Method EPA160.2

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 25 ML
Matrix: WATER
Result Units: mg/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-1	6/29/2000	7/5/2000	07/06/2000	N/A	1	930	80		25 ML
PA at TM	0006272-3	6/29/2000	7/5/2000	07/06/2000	N/A	1	1000	80		25 ML
PA-10.6	0006272-6	6/29/2000	7/5/2000	07/06/2000	N/A	1	20	20	U	100 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *TS0006272-1*

Ion Chromatography

Method EPA300.0

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-6.7
Lab ID: 0006272-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 06-Jul-00
Date Analyzed: 06-Jul-00

Prep Batch: IC000706-1
QCBatchID: IC000706-1-2
Run ID: IC000706-1A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 5 ML
Final Volume: 5 ML
Result Units: MG/L
File Name: uly06_038.

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	1	0.1	0.1	U	
16887-00-6	CHLORIDE	1	11	0.2		
24959-67-9	BROMIDE	1	0.2	0.2	U	
14808-79-8	SULFATE	1	48	1		

Data Package ID: *IC0006272-1*

Ion Chromatography

Method EPA300.0

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA at TM
Lab ID: 0006272-3

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 06-Jul-00
Date Analyzed: 06-Jul-00

Prep Batch: IC000706-1
QCBatchID: IC000706-1-2
Run ID: IC000706-1A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 5 ML
Final Volume: 5 ML
Result Units: MG/L
File Name: uly06_039.

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	1	0.1	0.1	U	
16887-00-6	CHLORIDE	1	11	0.2		
24959-67-9	BROMIDE	1	0.2	0.2	U	
14808-79-8	SULFATE	1	47	1		

Data Package ID: *IC0006272-1*

Ion Chromatography

Method EPA300.0

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-10.6
Lab ID: 0006272-6

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 06-Jul-00
Date Analyzed: 06-Jul-00

Prep Batch: IC000706-1
QCBatchID: IC000706-1-2
Run ID: IC000706-1A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 5 ML
Final Volume: 5 ML
Result Units: MG/L
File Name: uly06_040.

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	1	0.12	0.1		
16887-00-6	CHLORIDE	1	2.8	0.2		
24959 67 9	BROMIDE	1	0.2	0.2	U	
14808-79-8	SULFATE	1	38	1		

Data Package ID: *IC0006272 1*

Ion Chromatography

Method EPA300.0
Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: IC000706-2MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/06/2000
Date Analyzed: 07/06/2000

Prep Batch: IC000706-1
QCBatchID: IC000706-1-2
Run ID: IC000706-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 5 ML
Final Volume: 5 ML
Result Units: MG/L
File Name: uly06_029.

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	1	0.1	0.1	U	
16887-00-6	CHLORIDE	1	0.2	0.2	U	
24959-67-9	BROMIDE	1	0.2	0.2	U	
14808-79-8	SULFATE	1	1	1	U	

Data Package ID: *IC0006272-1*

PARAGON
ANALYTICS, INC.
AN EMPLOYEE OWNED SMALL BUSINESS

225 Commerce Drive Fort Collins, Colorado 80524 (800) 443-1511

Message

Phone (970) 490-1511
Fax (970) 490-1522

Re: HRMB 6.29.00 results

Metals data attached...

To	Michael Dale	Company	NMED OB
Fax No.	(505) 672-0466	Date	7/25/00
From	Lance Steere	Total Pages	12

If you do not receive all the pages, please call us back as soon as possible.

Total Recoverable ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-6.7
Lab ID: 0006272-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 10-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IT000710-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: TS00710

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	0.2	0.2	U	
7440-36-0	ANTIMONY	1	0.02	0.02	U	
7440-38-2	ARSENIC	1	0.01	0.01	U	
7440-39-3	BARIUM	1	0.19	0.1		
7440-41-7	BERYLLIUM	1	0.005	0.005	U	
7440-43-9	CADMIUM	1	0.005	0.005	U	
7440-70-2	CALCIUM	1	60	1		
7440-47-3	CHROMIUM	1	0.01	0.01	U	
7440-48-4	COBALT	1	0.01	0.01	U	
7440-50-8	COPPER	1	0.01	0.01	U	
7439-89-6	IRON	1	0.13	0.1		
7439-92-1	LEAD	1	0.003	0.003	U	
7439-95-4	MAGNESIUM	1	14	1		
7439-96-5	MANGANESE	1	0.31	0.01		
7440-02-0	NICKEL	1	0.02	0.02	U	
7440-09-7	POTASSIUM	1	13	1		
7782-49-2	SELENIUM	1	0.005	0.005	U	
7440-22-4	SILVER	1	0.01	0.01	U	
7440-23-5	SODIUM	1	6	1		
7440-28-0	THALLIUM	1	0.01	0.01	U	
7440-62-2	VANADIUM	1	0.01	0.01	U	
7440-66-6	ZINC	1	0.02	0.02	U	

Data Package ID: *IT0006272-1*

Dissolved ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-6.7
Lab ID: 0006272-2

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 10-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IT000710-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: TS00710

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	0.2	0.2	U	
7440-36-0	ANTIMONY	1	0.02	0.02	U	
7440-38-2	ARSENIC	1	0.01	0.01	U	
7440-39-3	BARIUM	1	0.19	0.1		
7440-41-7	BERYLLIUM	1	0.005	0.005	U	
7440-43-9	CADMIUM	1	0.005	0.005	U	
7440-70-2	CALCIUM	1	55	1		
7440-47-3	CHROMIUM	1	0.01	0.01	U	
7440-48-4	COBALT	1	0.01	0.01	U	
7440-50-8	COPPER	1	0.01	0.01	U	
7439-89-6	IRON	1	0.1	0.1	U	
7439-92-1	LEAD	1	0.003	0.003	U	
7439-95-4	MAGNESIUM	1	12	1		
7439-96-5	MANGANESE	1	0.47	0.01		
7440-02-0	NICKEL	1	0.02	0.02	U	
7440-09-7	POTASSIUM	1	16	1		
7782-49-2	SELENIUM	1	0.005	0.005	U	
7440-22-4	SILVER	1	0.01	0.01	U	
7440-23-5	SODIUM	1	9.3	1		
7440-28-0	THALLIUM	1	0.01	0.01	U	
7440-62-2	VANADIUM	1	0.01	0.01	U	
7440-66-6	ZINC	1	0.024	0.02		

Data Package ID: *IT0006272-1*

Total Recoverable ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA at TM
Lab ID: 0006272-3

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 10-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IT000710-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: TS00710

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	39	0.2		
7440-36-0	ANTIMONY	1	0.02	0.02	U	
7440-38-2	ARSENIC	1	0.014	0.01		
7440-39-3	BARIUM	1	1.3	0.1		
7440-41-7	BERYLLIUM	1	0.005	0.005	U	
7440-43-9	CADMIUM	1	0.005	0.005	U	
7440-70-2	CALCIUM	1	99	1		
7440-47-3	CHROMIUM	1	0.022	0.01		
7440-48-4	COBALT	1	0.015	0.01		
7440-50-8	COPPER	1	0.047	0.01		
7439-89-6	IRON	1	26	0.1		
7439-92-1	LEAD	1	0.058	0.003		
7439-95-4	MAGNESIUM	1	17	1		
7439-96-5	MANGANESE	1	3	0.01		
7440-02-0	NICKEL	1	0.039	0.02		
7440-09-7	POTASSIUM	1	23	1		
7782-49-2	SELENIUM	1	0.0096	0.005		
7440-22-4	SILVER	1	0.01	0.01	U	
7440-23-5	SODIUM	1	11	1		
7440-28-0	THALLIUM	1	0.01	0.01	U	
7440-62-2	VANADIUM	1	0.046	0.01		
7440-66-6	ZINC	1	0.16	0.02		

Data Package ID: *IT0006272-1*

Dissolved ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA at TM
Lab ID: 0006272-4

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 10-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IT000710-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: TS00710

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	0.54	0.2		
7440-36-0	ANTIMONY	1	0.02	0.02	U	
7440-38-2	ARSENIC	1	0.01	0.01	U	
7440-39-3	BARIUM	1	0.2	0.1		
7440-41-7	BERYLLIUM	1	0.005	0.005	U	
7440-43-9	CADMIUM	1	0.005	0.005	U	
7440-70-2	CALCIUM	1	56	1		
7440-47-3	CHROMIUM	1	0.01	0.01	U	
7440-48-4	COBALT	1	0.01	0.01	U	
7440-50-8	COPPER	1	0.01	0.01	U	
7439-89-6	IRON	1	0.35	0.1		
7439-92-1	LEAD	1	0.003	0.003	U	
7439-95-4	MAGNESIUM	1	12	1		
7439-96-5	MANGANESE	1	0.49	0.01		
7440-02-0	NICKEL	1	0.02	0.02	U	
7440-09-7	POTASSIUM	1	16	1		
7782-49-2	SELENIUM	1	0.0052	0.005		
7440-22-4	SILVER	1	0.01	0.01	U	
7440-23-5	SODIUM	1	9.2	1		
7440-28-0	THALLIUM	1	0.01	0.01	U	
7440-62-2	VANADIUM	1	0.01	0.01	U	
7440-66-6	ZINC	1	0.02	0.02	U	

Data Package ID: *IT0006272-1*

Total Recoverable ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-10.6
Lab ID: 0006272-5

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 10-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IT000710-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: TS00710

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	36	0.2		
7440-36-0	ANTIMONY	1	0.02	0.02	U	
7440-38-2	ARSENIC	1	0.016	0.01		
7440-39-3	BARIUM	1	1.2	0.1		
7440-41-7	BERYLLIUM	1	0.005	0.005	U	
7440-43-9	CADMIUM	1	0.005	0.005	U	
7440-70-2	CALCIUM	1	99	1		
7440-47-3	CHROMIUM	1	0.019	0.01		
7440-48-4	COBALT	1	0.014	0.01		
7440-50-8	COPPER	1	0.044	0.01		
7439-89-6	IRON	1	22	0.1		
7439-92-1	LEAD	1	0.052	0.003		
7439-95-4	MAGNESIUM	1	17	1		
7439-96-5	MANGANESE	1	3	0.01		
7440-02-0	NICKEL	1	0.039	0.02		
7440-09-7	POTASSIUM	1	22	1		
7782-49-2	SELENIUM	1	0.0061	0.005		
7440-22-4	SILVER	1	0.01	0.01	U	
7440-23-5	SODIUM	1	10	1		
7440-28-0	THALLIUM	1	0.01	0.01	U	
7440-62-2	VANADIUM	1	0.043	0.01		
7440-66-6	ZINC	1	0.16	0.02		

Data Package ID: *IT0006272-1*

Dissolved ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-10.6
Lab ID: 0006272-6

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 10-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IT000710-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: TS00710

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	0.2	0.2	U	
7440-36-0	ANTIMONY	1	0.02	0.02	U	
7440-38-2	ARSENIC	1	0.01	0.01	U	
7440-39-3	BARIUM	1	0.19	0.1		
7440-41-7	BERYLLIUM	1	0.005	0.005	U	
7440-43-9	CADMIUM	1	0.005	0.005	U	
7440-70-2	CALCIUM	1	60	1		
7440-47-3	CHROMIUM	1	0.01	0.01	U	
7440-48-4	COBALT	1	0.01	0.01	U	
7440-50-8	COPPER	1	0.01	0.01	U	
7439-89-6	IRON	1	0.11	0.1		
7439-92-1	LEAD	1	0.003	0.003	U	
7439-95-4	MAGNESIUM	1	14	1		
7439-96-5	MANGANESE	1	0.31	0.01		
7440-02-0	NICKEL	1	0.02	0.02	U	
7440-09-7	POTASSIUM	1	13	1		
7782-49-2	SELENIUM	1	0.005	0.005	U	
7440-22-4	SILVER	1	0.01	0.01	U	
7440-23-5	SODIUM	1	6	1		
7440-28-0	THALLIUM	1	0.01	0.01	U	
7440-62-2	VANADIUM	1	0.01	0.01	U	
7440-66-6	ZINC	1	0.02	0.02	U	

Data Package ID: *IT0006272-1*

Dissolved ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-6.7
Lab ID: 0006272-2

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 12-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IP000712-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: IS00712

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	0.1	0.1	U	
7439-93-2	LITHIUM	1	0.01	0.01	U	
7440-21-3	SILICON	1	6.4	0.05		

Data Package ID: *IP0006272-1*

Dissolved ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA at TM
Lab ID: 0006272-4

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 12-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IP000712-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: IS00712

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	0.1	0.1	U	
7439-93-2	LITHIUM	1	0.01	0.01	U	
7440-21-3	SILICON	1	6.8	0.05		

Data Package ID: *IP0006272-1*

Dissolved ICP Metals

Method SW6010

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-10.6
Lab ID: 0006272-6

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 12-Jul-00

Prep Batch: IP000710-1
QCBatchID: IP000710-1-1
Run ID: IP000712-1A1
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 G
Final Volume: 50 ML
Result Units: MG/L
File Name: IS00712

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	0.1	0.1	U	
7439-93-2	LITHIUM	1	0.01	0.01	U	
7440-21-3	SILICON	1	9.7	0.05		

Data Package ID: *IP0006272-1*

Dissolved MERCURY

Method SW7470

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 20 G
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-G.7	0006272-2	6/29/2000	7/10/2000	07/10/2000	N/A	1	0.0002	0.0002	U	20 G
PA at TM	0006272-4	6/29/2000	7/10/2000	07/10/2000	N/A	1	0.0002	0.0002	U	20 G
PA-10.6	0006272-6	6/29/2000	7/10/2000	07/10/2000	N/A	1	0.0002	0.0002	U	20 G

Comments:

1. ND or U - Not Detected at or above the client requested detection limit.

Data Package ID: *HG0006272-1*

Total Recoverable MERCURY

Method SW7470

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 20 G
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-1	6/29/2000	7/10/2000	07/10/2000	N/A	1	0.0002	0.0002	U	20 G
PA at TM	0006272-3	6/29/2000	7/10/2000	07/10/2000	N/A	1	0.0002	0.0002	U	20 G
PA-10 6	0006272-5	6/29/2000	7/10/2000	07/10/2000	N/A	1	0.0002	0.0002	U	20 G

Comments:

1. ND or U – Not Detected at or above the client requested detection limit.

Data Package ID: *HG0006272-1*

Paragon Analytics, Inc.

INORGANICS CASE NARRATIVE

NMED DOE Oversight Bureau

HRMB 6.29.00

Order Number - 0006272

1. This report consists of data for three water samples.
2. The sample were received cool and intact on 06/30/00.
3. The samples had been correctly preserved for the requested analyses.
4. The samples were prepared for analysis based on SW-846, 3rd Edition procedures and Methods for the Chemical Analysis of Waters and Wastes (MCAWW), May 1994 procedures.
5. The samples were analyzed following SW-846 and MCAWW procedures for the following methods:

Analyte	Method	SOP #
Bicarbonate	310.1	1106 Rev 1
Carbonate	310.1	1106 Rev 1
Total Cyanide	9010	1110 Rev 1
Ammonia as N	350.3	1116 Rev 0
Nitrate/Nitrite as N	353.3	1108 Rev 0
Chloride	300.0	1113 Rev 0
Bromide	300.0	1113Rev 0
Fluoride	300.0	1113 Rev 0
Sulfate	300.0	1113 Rev 0
Total Phosphorus	365.2	1119 Rev 0
TDS	160.1	1101 Rev 1
TSS	160.2	1100 Rev 1

6. All standards and solutions were used within their recommended shelf life.
7. The samples were prepared and analyzed within the established hold times for all analyses.

All in house quality control procedures were followed, as described below.

8. General quality control procedures.

   - A preparation (method) blank and laboratory control sample (LCS) were prepared and analyzed with the samples in each preparation batch. There were not more than 20 samples in each preparation batch.
   - The method blank associated with each batch was below the reporting limits for the requested analytes. This indicates that no contaminants were introduced to the samples during preparation and analysis.
   - The LCS was within the acceptance limits for all analyses.
   - All initial and continuing calibration blanks (ICB/CCB) associated with each batch were below the reporting limits for the requested analytes.
   - All initial and continuing calibration verifications (ICV/CCV) associated with each batch were within the acceptance criteria for the requested analytes. This indicates a valid calibration and stable instrument conditions.

9. Matrix specific quality control procedures.

   PAI sample ID 0006269-1 was designated as the quality control sample for the ammonia, bicarbonate, carbonate, and the total phosphorus batches. PAI sample ID 0006254-1 was designated as the quality control sample for the total cyanide batch. PAI sample ID 0006226-1 was designated as the quality control sample for the IC batch. PAI sample ID 0006272-1 was designated as the quality control sample for the TDS and TSS batches. PAI sample ID 0007074-1 was designated as the quality control sample for the nitrate/nitrite batch.

   - A matrix spike (MS) and matrix spike duplicate (MSD) were prepared and analyzed with the total cyanide, ammonia, nitrate/nitrite, total phosphorus and IC batches. All guidance criteria for precision and accuracy were met with the following exceptions.

Analyte	Sample ID
Chloride	0006226-1 MS & MSD

   The chloride concentration in the native sample was above the analytical range of this analyte on the ion chromatograph; therefore accurate quantitation of MS/MSD recoveries for chloride was not possible as the spike added was small relative to the unspiked sample concentrations. The MS/MSD results were within acceptance limits for all other associated analyses. The Laboratory Control Sample indicates that the procedure was in control.

   - A sample duplicate was prepared and analyzed with the bicarbonate, carbonate, TSS and TDS batches. All guidance criteria for precision were met.

10. It was necessary to dilute PAI samples 0006272-1, -3, and -5 for the nitrate/nitrite analysis in order to protect the cadmium reduction column and to bring the instrument response to within the analytical range of these analytes on the spectrophotometer. It was necessary to dilute PAI sample ID 0006272-3 for the total phosphorus analysis in order to bring the instrument response to within the analytical range of this analyte on the spectrophotometer.

The data contained in the following report have been reviewed and approved by the personnel listed below:

Tony Briney Tony Briney Inorganic Chemist	8/4/00 Date
B Reviewer's Initials	8/4 Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 0006272
Client Name: NMED DOE Oversight Bureau
Client Project Name:
Client Project Number: HRMB 6.29.00
Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
PA-6.7	0006272-1		WATER	6/29/00	8:30
PA-6.7	0006272-2		WATER	6/29/00	8:30
PA at TM	0006272-3		WATER	6/29/00	9:30
PA at TM	0006272-4		WATER	6/29/00	9:30
PA-10.6	0006272-5		WATER	6/29/00	11:10
PA-10.6	0006272-6		WATER	6/29/00	11:10

Inorganic Data Reporting Qualifiers

The following qualifiers are used by the laboratory when reporting results of inorganic analyses.

- Concentration qualifier -- If the analyte was analyzed for but not detected a "U" is entered.

- QC qualifier -- Specified entries and their meanings are as follows:

  N - Spiked sample recovery not within control limits.

  * - Duplicate analysis (relative percent difference) not within control limits.

B - The method blank for the analysis contained the analyte of interest above the reporting limit.

BICARBONATE AS CACO3

Method EPA310.1

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 50 ML
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-1	6/29/2000	7/10/2000	07/10/2000	N/A	1	170	10		50 ML
PA at TM	0006272-3	6/29/2000	7/10/2000	07/10/2000	N/A	1	180	10		50 ML
PA-10.6	0006272-5	6/29/2000	7/10/2000	07/10/2000	N/A	1	190	10		50 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *AK0006272-1*

CARBONATE AS CACO3

Method EPA310.1

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 50 ML
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-1	6/29/2000	7/10/2000	07/10/2000	N/A	1	10	10	U	50 ML
PA at TM	0006272-3	6/29/2000	7/10/2000	07/10/2000	N/A	1	10	10	U	50 ML
PA-10.6	0006272-5	6/29/2000	7/10/2000	07/10/2000	N/A	1	10	10	U	50 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *AK0006272-1*

AMMONIA

Method EPA350.3

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 10 ML
Matrix: WATER
Result Units: mg/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-1	6/29/2000	7/7/2000	07/07/2000	N/A	1	0.5	0.5	U	10 ML
PA at TM	0006272-3	6/29/2000	7/7/2000	07/07/2000	N/A	1	0.5	0.5	U	10 ML
PA-10.6	0006272-5	6/29/2000	7/7/2000	07/07/2000	N/A	1	0.64	0.5		10 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *NH0006272-1*

CYANIDE, TOTAL

Method SW9010

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 50 ML
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-1	6/29/2000	7/10/2000	07/10/2000	N/A	1	0.019	0.01		50 ML
PA at TM	0006272-3	6/29/2000	7/10/2000	07/10/2000	N/A	1	0.015	0.01		50 ML
PA-10.6	0006272-5	6/29/2000	7/10/2000	07/10/2000	N/A	1	0.015	0.01		50 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *CN0006272-1*

NITRATE/NITRITE

Method EPA353.3

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 3 ML
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-1	6/29/2000	7/20/2000	07/22/2000	N/A	2	1	0.1		3 ML
PA at TM	0006272-3	6/29/2000	7/20/2000	07/22/2000	N/A	2	0.87	0.1		3 ML
PA-10.6	0006272-5	6/29/2000	7/20/2000	07/22/2000	N/A	2	0.49	0.1		3 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *NN0006272-1*

TOTAL PHOSPHORUS

Method EPA365.2

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 50 ML
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-1	6/29/2000	7/12/2000	07/12/2000	N/A	1	0.81	0.05		50 ML
PA at TM	0006272-3	6/29/2000	7/12/2000	07/12/2000	N/A	5	0.92	0.25		50 ML
PA-10.6	0006272-5	6/29/2000	7/12/2000	07/12/2000	N/A	1	0.84	0.05		50 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *PO0006272-1*

TOTAL DISSOLVED SOLIDS

Method EPA160.1

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 25 ML
Matrix: WATER
Result Units: mg/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-1	6/29/2000	7/5/2000	07/06/2000	N/A	1	620	80		25 ML
PA at TM	0006272-3	6/29/2000	7/5/2000	07/06/2000	N/A	1	580	80		25 ML
PA-10.6	0006272-5	6/29/2000	7/5/2000	07/06/2000	N/A	1	410	20		100 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *TD0006272-1*

TOTAL SUSPENDED SOLIDS

Method EPA160.2

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: NMED DOE Oversight Bureau
Client Project ID: HRMB 6.29.00
Work Order Number: 0006272
Reporting Basis: As Received

Final Volume: 25 ML
Matrix: WATER
Result Units: mg/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
PA-6.7	0006272-1	6/29/2000	7/5/2000	07/06/2000	N/A	1	980	80		25 ML
PA at TM	0006272-3	6/29/2000	7/5/2000	07/06/2000	N/A	1	1000	80		25 ML
PA-10.6	0006272-5	6/29/2000	7/5/2000	07/06/2000	N/A	1	20	20	U	100 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *TS0006272-1*

Ion Chromatography

Method EPA300.0

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-6.7
Lab ID: 0006272-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 06-Jul-00
Date Analyzed: 06-Jul-00

Prep Batch: IC000706-1
QCBatchID: IC000706-1-2
Run ID: IC000706-1A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 5 ML
Final Volume: 5 ML
Result Units: MG/L
File Name: uly06_038.

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	1	0.1	0.1	U	
16887-00-6	CHLORIDE	1	11	0.2		
24959-67-9	BROMIDE	1	0.2	0.2	U	
14808-79-8	SULFATE	1	48	1		

Data Package ID: *IC0006272-1*

Ion Chromatography

Method EPA300.0

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA at TM
Lab ID: 0006272-3

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 06-Jul-00
Date Analyzed: 06-Jul-00

Prep Batch: IC000706-1
QCBatchID: IC000706-1-2
Run ID: IC000706-1A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 5 ML
Final Volume: 5 ML
Result Units: MG/L
File Name: uly06_039.

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	1	0.1	0.1	U	
16887-00-6	CHLORIDE	1	11	0.2		
24959-67-9	BROMIDE	1	0.2	0.2	U	
14808-79-8	SULFATE	1	47	1		

Data Package ID: *IC0006272-1*

Ion Chromatography

Method EPA300.0

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-10.6
Lab ID: 0006272-5

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 06-Jul-00
Date Analyzed: 06-Jul-00

Prep Batch: IC000706-1
QCBatchID: IC000706-1-2
Run ID: IC000706-1A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 5 ML
Final Volume: 5 ML
Result Units: MG/L
File Name: uly06_040.

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	1	0.12	0.1		
16887-00-6	CHLORIDE	1	2.8	0.2		
24959-67-9	BROMIDE	1	0.2	0.2	U	
14808-79-8	SULFATE	1	38	1		

Data Package ID: *IC0006272-1*

Ion Chromatography

Method EPA300.0

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: IC000706-2MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/06/2000
Date Analyzed: 07/06/2000

Prep Batch: IC000706-1
QCBatchID: IC000706-1-2
Run ID: IC000706-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 5 ML
Final Volume: 5 ML
Result Units: MG/L
File Name: uly06_029.

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	1	0.1	0.1	U	
16887-00-6	CHLORIDE	1	0.2	0.2	U	
24959-67-9	BROMIDE	1	0.2	0.2	U	
14808-79-8	SULFATE	1	1	1	U	

Data Package ID: *IC0006272-1*

BICARBONATE AS CACO3

Method EPA310.1

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: AK000710-1MB

Sample Matrix: WATER
% Moisture: N/A

Prep Batch: AK000710-1
QCBatchID: AK000710-1-1
Run ID: AK000710-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 100 ML
Final Volume: 100 ML
Result Units: MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag
AK000710-1MB	7/10/2000	07/10/2000	N/A	1	5	5	U

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *AK0006272-1*

BICARBONATE AS CACO3

Method EPA310.1

Blank Spike

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: AK000710-1LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/10/2000
Date Analyzed: 07/10/2000

Prep Batch: AK000710-1
QCBatchID: AK000710-1-1
Run ID: AK000710-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 100 ML
Final Volume: 100 ML
Result Units: MG/L

CASNO	Target Analyte	Spike Added	BS Result	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
10-13-9	BICARBONATE AS CACO3	100	98.1	5		98	85 - 115

Data Package ID: *AK0006272-1*

BICARBONATE AS CACO3

Method EPA310.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Reporting Basis: As Received
Sample Aliquot: 50 ML
Final Volume: 50ML
Matrix: WATER
Result Units MG/L

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
SHARED QC	0006269-1	07/10/2000	07/10/2000	1	51.6		52		10	0	15

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *AK0006272-1*

CARBONATE AS CACO3

Method EPA310.1

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: AK000710-1MB

Sample Matrix: WATER
% Moisture: N/A

Prep Batch: AK000710-1
QCBatchID: AK000710-1-1
Run ID: AK000710-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 100 ML
Final Volume: 100 ML
Result Units: MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag
AK000710-1MB	7/10/2000	07/10/2000	N/A	1	5	5	U

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *AK0006272-1*

CARBONATE AS CACO3

Method EPA310.1

Blank Spike

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: AK000710-1LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/10/2000
Date Analyzed: 07/10/2000

Prep Batch: AK000710-1
QCBatchID: AK000710-1-1
Run ID: AK000710-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 100 ML
Final Volume: 100 ML
Result Units: MG/L

CASNO	Target Analyte	Spike Added	BS Result	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
3812-32-6	CARBONATE AS CACO3	100	98.1	5		98	85 - 115

Data Package ID: *AK0006272-1*

CARBONATE AS CACO3

Method EPA310.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Reporting Basis: As Received
Sample Aliquot: 50 ML
Final Volume: 50ML
Matrix: WATER
Result Units MG/L

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
SHARED QC	0006269-1	07/10/2000	07/10/2000	1	10	U	10	U	10		15

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *AK0006272-1*

Ammonia as N

Method EPA350.3

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: NH000707-1MB

Sample Matrix: WATER
% Moisture: N/A

Prep Batch: NH000707-1
QCBatchID: NH000707-1-1
Run ID: NH000707-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 10 ML
Final Volume: 10 ML
Result Units: mg/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag
NH000707-1MB	7/7/2000	07/07/2000	N/A	1	0.5	0.5	U

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *NH0006272-1*

Ammonia as N

Method EPA350.3

Blank Spike

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: NH000707-1LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/07/2000
Date Analyzed: 07/07/2000

Prep Batch: NH000707-1
QCBatchID: NH000707-1-1
Run ID: NH000707-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 10 ML
Final Volume: 10 ML
Result Units: mg/L

CASNO	Target Analyte	Spike Added	BS Result	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
7664-41-7	AMMONIA	10	10.2	0.5		102	85 - 115

Data Package ID: *NH0006272-1*

Ammonia as N

Method EPA350.3

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: SHARED QC
LabID: 0006269-1MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 27-Jun-00
Date Extracted: 07-Jul-00
Date Analyzed: 07-Jul-00

Prep Batch: NH000707-1
QCBatchID: NH000707-1-1
Run ID: NH000707-1A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 10 ML
Final Volume: 10 ML
Result Units: mg/L

Spike Added	Sample Result	Samp Qual	Reporting Limit	MS Result	MS % Rec.	MS Qualifier	Control Limits
10	0.57	U	0.57	9.34	93		75 - 125%

MSD Lab ID: 0006269-1MSD

Spike Added	MSD Result	MSD Qual	Reporting Limit	MSD % Rec.	RPD	RPD Limits
10	8.95		0.57	89	4	15

Data Package ID: *NH0006272-1*

Total Cyanide

Method SW9010

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: CN000710-2MB

Sample Matrix: WATER
% Moisture: N/A

Prep Batch: CN000710-2
QCBatchID: CN000710-2-2
Run ID: CN000710-3A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 50 ML
Final Volume: 50 ML
Result Units: MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag
CN000710-2MB	7/10/2000	07/10/2000	N/A	1	0.01	0.01	U

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *CN0006272-1*

Total Cyanide

Method SW9010

Blank Spike

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: CN000710-2LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/10/2000
Date Analyzed: 07/10/2000

Prep Batch: CN000710-2
QCBatchID: CN000710-2-2
Run ID: CN000710-3A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 50 ML
Final Volume: 50 ML
Result Units: MG/L

CASNO	Target Analyte	Spike Added	BS Result	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
57-12-5	CYANIDE, TOTAL	0.4	0.419	0.01		105	85 - 115

Data Package ID: *CN0006272-1*

Total Cyanide

Method SW9010

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: SHARED QC
LabID: 0006254-1MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 27-Jun-00
Date Extracted: 10-Jul-00
Date Analyzed: 10-Jul-00

Prep Batch: CN000710-2
QCBatchID: CN000710-2-2
Run ID: CN000710-3A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 ML
Final Volume: 50 ML
Result Units: MG/L

Spike Added	Sample Result	Samp Qual	Reporting Limit	MS Result	MS % Rec.	MS Qualifier	Control Limits
0.1	0.01	U	0.01	0.0999	100		63 - 126%

MSD Lab ID: 0006254-1MSD

Spike Added	MSD Result	MSD Qual	Reporting Limit	MSD % Rec.	RPD	RPD Limits
0.1	0.104		0.01	104	4	30

Data Package ID: *CN0006272-1*

Nitrate/Nitrite as N

Method EPA353.3

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: NN000720-1MB

Sample Matrix: WATER
% Moisture: N/A

Prep Batch: NN000720-1
QCBatchID: NN000720-1-1
Run ID: NN000722-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 3 ML
Final Volume: 3 ML
Result Units: MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag
NN000720-1MB	7/20/2000	07/22/2000	N/A	1	0.05	0.05	U

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *NN0006272-1*

Nitrate/Nitrite as N

Method EPA353.3

Blank Spike

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: NN000720-1LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/20/2000
Date Analyzed: 07/22/2000

Prep Batch: NN000720-1
QCBatchID: NN000720-1-1
Run ID: NN000722-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 3 ML
Final Volume: 3 ML
Result Units: MG/L

CASNO	Target Analyte	Spike Added	BS Result	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
1-005	NITRATE/NITRITE	0.5	0.503	0.05		101	90 - 110

Data Package ID: *NN0006272-1*

Nitrate/Nitrite as N

Method EPA353.3

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: SHARED QC
LabID: 0007074-1MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 07-Jul-00
Date Extracted: 20-Jul-00
Date Analyzed: 22-Jul-00

Prep Batch: NN000720-1
QCBatchID: NN000720-1-1
Run ID: NN000722-1A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 3 ML
Final Volume: 3 ML
Result Units: MG/L

Spike Added	Sample Result	Samp Qual	Reporting Limit	MS Result	MS % Rec.	MS Qualifier	Control Limits
5	5.7		0.5	10	86		75 - 125%

MSD Lab ID: 0007074-1MSD

Spike Added	MSD Result	MSD Qual	Reporting Limit	MSD % Rec.	RPD	RPD Limits
5	10.4		0.5	94	4	20

Data Package ID: *NN0006272-1*

Total Phosphorus as P

Method EPA365.2

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: PO000712-1MB

Sample Matrix: WATER
% Moisture: N/A

Prep Batch: PO000712-1
QCBatchID: PO000712-1-1
Run ID: PO000712-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 50 ML
Final Volume: 50 ML
Result Units: MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag
PO000712-1MB	7/12/2000	07/12/2000	N/A	1	0.05	0.05	U

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *PO0006272-1*

Total Phosphorus as P

Method EPA365.2

Blank Spike

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006269
Client Name: Los Alamos National Laboratory SMO
ClientProject ID: 6966R

Lab ID: PO000712-1LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/12/2000
Date Analyzed: 07/12/2000

Prep Batch: PO000712-1
QCBatchID: PO000712-1-1
Run ID: PO000712-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 50 ML
Final Volume: 50 ML
Result Units: MG/L

CASNO	Target Analyte	Spike Added	BS Result	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
7723-14-0	TOTAL PHOSPHORUS	0.5	0.521	0.05		104	80 - 120

Data Package ID: *PO0006269-1*

Total Phosphorus as P

Method EPA365.2

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006269
Client Name: Los Alamos National Laboratory SMO
ClientProject ID: 6966R

Field ID: CA18-00-0003
LabID: 0006269-1MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 27-Jun-00
Date Extracted: 12-Jul-00
Date Analyzed: 12-Jul-00

Prep Batch: PO000712-1
QCBatchID: PO000712-1-1
Run ID: PO000712-1A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 ML
Final Volume: 50 ML
Result Units: MG/L

Spike Added	Sample Result	Samp Qual	Reporting Limit	MS Result	MS % Rec.	MS Qualifier	Control Limits
0.5	0.13		0.05	0.665	106		80 - 120%

MSD Lab ID: 0006269-1MSD

Spike Added	MSD Result	MSD Qual	Reporting Limit	MSD % Rec.	RPD	RPD Limits
0.5	0.649		0.05	103		20

Data Package ID: *PO0006269-1*

Total Dissolved Solids

Method EPA160.1

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: TD000705-1MB

Sample Matrix: WATER
% Moisture: N/A

Prep Batch: TD000705-1
QCBatchID: TD000705-1-1
Run ID: TD000706-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 100 ML
Final Volume: 100 ML
Result Units: mg/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag
TD000705-1MB	7/5/2000	07/06/2000	N/A	1	20	20	U

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *TD0006272-1*

Total Dissolved Solids

Method EPA160.1

Blank Spike

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: TD000705-1LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/05/2000
Date Analyzed: 07/06/2000

Prep Batch: TD000705-1
QCBatchID: TD000705-1-1
Run ID: TD000706-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 100 ML
Final Volume: 100 ML
Result Units: mg/L

CASNO	Target Analyte	Spike Added	BS Result	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
10-33-3	TOTAL DISSOLVED SOLIDS	400	407	20		102	85 - 115

Data Package ID: *TD0006272-1*

Total Dissolved Solids

Method EPA160.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Reporting Basis: As Received
Sample Aliquot: 25 ML
Final Volume: 25ML
Matrix: WATER
Result Units mg/L

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
PA-6.7	0006272-1	07/05/2000	07/06/2000	1	724		620		80	15	15

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *TD0006272-1*

Total Suspended Solids

Method EPA160.2

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: TS000705-1MB

Sample Matrix: WATER
% Moisture: N/A

Prep Batch: TS000705-1
QCBatchID: TS000705-1-1
Run ID: TS000706-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 500 ML
Final Volume: 500 ML
Result Units: mg/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag
TS000705-1MB	7/5/2000	07/06/2000	N/A	1	4	4	U

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *TS0006272-1*

Total Suspended Solids

Method EPA160.2

Blank Spike

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: TS000705-1LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/05/2000
Date Analyzed: 07/06/2000

Prep Batch: TS000705-1
QCBatchID: TS000705-1-1
Run ID: TS000706-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 500 ML
Final Volume: 500 ML
Result Units: mg/L

CASNO	Target Analyte	Spike Added	BS Result	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
10-32-2	TOTAL SUSPENDED SOLIDS	78	76	4		98	85 - 115

Data Package ID: *TS0006272-1*

Total Suspended Solids

Method EPA160.2

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Reporting Basis: As Received
Sample Aliquot: 25 ML
Final Volume: 25ML
Matrix: WATER
Result Units mg/L

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
PA-6.7	0006272-1	07/05/2000	07/06/2000	1	964		980		80	2	15

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *TS0006272-1*

Ion Chromatography

Method EPA300.0

Blank Spike

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: IC000706-2LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/06/2000
Date Analyzed: 07/06/2000

Prep Batch: IC000706-1
QCBatchID: IC000706-1-2
Run ID: IC000706-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 5 ML
Final Volume: 5 ML
Result Units: MG/L

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
16984-48-8	FLUORIDE	5	4.93	0.1		99	90 - 110%
16887-00-6	CHLORIDE	10	9.91	0.2		99	90 - 110%
24959-67-9	BROMIDE	10	9.63	0.2		96	90 - 110%
14808-79-8	SULFATE	50	49.5	1		99	90 - 110%

Data Package ID: *IC0006272-1*

Ion Chromatography

Method EPA300.0

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: SHARED QC
LabID: 0006226-1MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 26-Jun-00
Date Extracted: 06-Jul-00
Date Analyzed: 06-Jul-00

Prep Batch: IC000706-1
QCBatchID: IC000706-1-2
Run ID: IC000706-1A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 5 ML
Final Volume: 5 ML
Result Units: MG/L

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
16984-48-8	FLUORIDE	0.89		2.81		0.1	2	96	80 - 120%
24959-67-9	BROMIDE	0.2	U	4.96		0.2	5	99	85 - 115%
14808-79-8	SULFATE	6.8		26		1	20	96	85 - 115%

MSD Lab ID: 0006226-1MSD

CASNO	Target Analyte	Spike Added	MSD Result	MSD Qual	Reporting Limit	MSD % Rec.	RPD	RPD Limits
16984-48-8	FLUORIDE	2	2.86		0.1	99	2	20
24959-67-9	BROMIDE	5	4.99		0.2	100	1	15
14808-79-8	SULFATE	20	26.2		1	97	1	15

Data Package ID: *IC0006272-1*

Paragon Analytics, Inc.

Radiochemistry Case Narrative
Isotopic Uranium

NMED DOE Oversight Bureau

HRMB 6.29.00

PAI WO 0006272

1. This report consists of 2 water samples received by Paragon on 06/30/2000.

2. These samples were prepared according to Paragon Analytics, Inc. procedures PAI SOP776R3 and PAI SOP778R4.

3. The samples were analyzed for the presence of isotopic uranium according to Paragon Analytics, Inc. procedure PAI SOP714R5. The analyses were completed on 8/24/2000.

4. The analysis results for these samples are reported on an as received basis in units of pCi/L. The samples were filtered prior to analysis.

5. Due to insufficient sample volume, a duplicate laboratory control sample (LCS) was prepared in lieu of a prep batch duplicate.

6. Due to possible tailing of the U-234 peak into the U-235 region of interest, there is a potential high bias in the reported U-235 results. Results are submitted without qualification.

7. No anomalous situations were encountered during the preparation or analysis of these samples. All quality control criteria were met.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Becky Wasson — 8-31-00

Becky Wasson — Date

Radiochemistry Instrumentation

Renee Kelly — 9-1-00

Radiochemistry Final Data Review — Date

Isotopic Uranium By Alpha Spectroscopy

Method PAI 714R5

Method Blank Results

Reported on: Thursday, August 31, 2000 15:22:50

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: HRMB 6.29.00

Laboratory Name: Paragon Analytics, Inc.

PAI Work Order: 0006272

Field ID:
Lab ID: AS03616BLK1

Sample Matrix: Water
Date Prepared: 09-Aug-00
Prep SOP: PAI 778R4
Prep Batch: AS03616

Date Collected: 09-Aug-00
Date Analyzed: 23-Aug-00
Analytical SOP: PAI 714R5

Final Aliquot: 1.000
Aliquot Units: L
Report Basis: As Received
Count Time (min.): 300

Target Nuclide	Result +/- 2s TPU	MDC	Reporting Units	Lab Qualifier
U-234	-0.004 +/- 0.020	0.063	pCi/L	U
U-235	-0.002 +/- 0.020	0.059	pCi/L	U
U-238	0.023 +/- 0.031	0.054	pCi/L	U

Chemical Yield Summary

Tracer Nuclide	Tracer Known	Tracer Measured	Units	Tracer Yield	Control Limits
U-232	4.44	2.92	pCi/L	66%	30-110%

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y2 - Chemical Yield outside default limits.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

B - Analyte concentration greater than MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: *UW0006272-1*

Isotopic Uranium By Alpha Spectroscopy

Method PAI 714R5

LCS Results

Reported on: Thursday, August 31, 2000 15:22:51

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: HRMB 6.29.00

Laboratory Name: Paragon Analytics, Inc.

PAI Work Order: 0006272

Field ID:
Lab ID: AS03616LCS1

Sample Matrix: Water
Date Prepared: 09-Aug-00
Prep SOP: PAI 778R4
Prep Batch: AS03616

Date Collected: 09-Aug-00
Date Analyzed: 23-Aug-00
Analytical SOP: PAI 714R5

Final Aliquot: 1.000
Aliquot Units: L
Report Basis: As Received
Count Time (min.): 300

Target Nuclide	LCS Results +/- 2s TPU	MDC	Spike Added	Reporting Units	LCS Recovery	Control Limits	Lab Qualifier
U-234	4.63 +/- 0.76	0.075	4.51	pCi/L	103%	82-122%	P
U-235	0.267 +/- 0.099	0.068	N/A	pCi/L	N/A	N/A	
U-238	4.79 +/- 0.78	0.059	4.51	pCi/L	106%	82-122%	P

Chemical Yield Summary

Tracer Nuclide	Tracer Known	Tracer Measured	Units	Tracer Yield	Control Limits
U-232	4.44	2.85	pCi/L	64%	30-110%

Comments:

Data Package ID: *UW0006272-1*

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y2 - Chemical Yield outside default limits.

* - Duplicate DER not within control limits.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

Isotopic Uranium By Alpha Spectroscopy

Method PAI 714R5

LCS Results

Reported on: Thursday, August 31, 2000 15:22:51

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: HRMB 6.29.00

Laboratory Name: Paragon Analytics, Inc.

PAI Work Order: 0006272

Field ID:
Lab ID: AS03616LCS1-D1

Sample Matrix: Water
Date Prepared: 09-Aug-00
Prep SOP: PAI 778R4
Prep Batch: AS03616

Date Collected: 09-Aug-00
Date Analyzed: 23-Aug-00
Analytical SOP: PAI 714R5

Final Aliquot: 1.000
Aliquot Units: L
Report Basis: As Received
Count Time (min.): 300

Target Nuclide	LCS Results +/- 2s TPU	MDC	Spike Added	Reporting Units	LCS Recovery	Control Limits	Lab Qualifier
U-234	3.97 +/- 0.66	0.061	4.51	pCi/L	88%	82-122%	P
U-235	0.218 +/- 0.089	0.061	N/A	pCi/L	N/A	N/A	
U-238	4.30 +/- 0.71	0.049	4.51	pCi/L	95%	82-122%	P

Chemical Yield Summary

Tracer Nuclide	Tracer Known	Tracer Measured	Units	Tracer Yield	Control Limits
U-232	4.44	2.59	pCi/L	58%	30-110%

Comments:

Data Package ID: *UW0006272-1*

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y2 - Chemical Yield outside default limits.

* - Duplicate DER not within control limits.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

Isotopic Uranium By Alpha Spectroscopy

Method PAI 714R5

Duplicate Sample Results (DER)

Reported on: Thursday, August 31, 2000 15:22:51

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: HRMB 6.29.00

Laboratory Name: Paragon Analytics, Inc.

PAI Work Order: 0006272

Field ID:	Prep Date	Analysis Date	Prep Batch	Final Aliquot
Lab ID: AS03616LCS1	8/9/2000	8/23/2000	AS03616	1.000
DUP ID: AS03616LCS1-D1	8/9/2000	8/23/2000	AS03616	1.000

Sample Matrix: Water
Date Collected: 09-Aug-00
Analytical SOP: PAI 714R5
Prep SOP: PAI 778R4
Aliquot Units: L
Report Basis: As Received

Analyte	Sample Result +/- 2s TPU	Duplicate Result +/- 2s TPU	Units	DER	Warning Limit	Lab Qualifiers
U-234	4.63 +/- 0.76	3.97 +/- 0.66	pCi/L	0.66	< 1.42	
U-235	0.267 +/- 0.099	0.218 +/- 0.089	pCi/L	0.37	< 1.42	
U-238	4.79 +/- 0.78	4.30 +/- 0.71	pCi/L	0.46	< 1.42	

Chemical Yield Summary

Tracer Nuclide	Tracer Known	Tracer Measured	Units	Tracer Yield	Control Limits
U-232	4.44	2.59	pCi/L	58%	30-110%

Comments:

Qualifiers/Flags:

W - DER is greater than Warning Limit of 1.42

H - DER is Higher han Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

Data Package ID: *UW0006272-1*

Isotopic Uranium By Alpha Spectroscopy

Method PAI 714R5

Sample Results

Reported on: Thursday, August 31, 2000 15:22:50

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: HRMB 6.29.00

Laboratory Name: Paragon Analytics, Inc.

PAI Work Order: 0006272

Field ID: PA-6.7
Lab ID: 0006272-1

Sample Matrix: Water
Date Prepared: 09-Aug-00
Prep SOP: PAI 778R4
Prep Batch: AS03616

Date Collected: 29-Jun-00
Date Analyzed: 24-Aug-00
Analytical SOP: PAI 714R5

Final Aliquot: 0.9550
Aliquot Units: L
Report Basis: Filtered
Count Time (min.): 300

Target Nuclide	Result +/- 2 s TPU	MDC	Reporting Units	Lab Qualifier
U-234	1.10 +/- 0.23	0.055	pCi/L	
U-235	0.084 +/- 0.052	0.055	pCi/L	LT
U-238	1.20 +/- 0.25	0.045	pCi/L	

Chemical Yield Summary

Tracer Nuclide	Tracer Known	Tracer Measured	Units	Tracer Yield	Control Limits
U-232	4.65	3.14	pCi/L	67%	30-110%

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y2 - Chemical Yield outside default limits.

* - Duplicate DER not within control limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: *UW0006272-1*

Isotopic Uranium By Alpha Spectroscopy

Method PAI 714R5

Sample Results

Reported on: Thursday, August 31, 2000 15:22:50

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: HRMB 6.29.00

Laboratory Name: Paragon Analytics, Inc.

PAI Work Order: 0006272

Field ID: PA at TM
Lab ID: 0006272-3

Sample Matrix: Water
Date Prepared: 09-Aug-00
Prep SOP: PAI 778R4
Prep Batch: AS03616

Date Collected: 29-Jun-00
Date Analyzed: 23-Aug-00
Analytical SOP: PAI 714R5

Final Aliquot: 1.000
Aliquot Units: L
Report Basis: Filtered
Count Time (min.): 300

Target Nuclide	Result +/- 2 s TPU	MDC	Reporting Units	Lab Qualifier
U-234	1.17 +/- 0.25	0.071	pCi/L	
U-235	0.031 +/- 0.038	0.067	pCi/L	U
U-238	1.17 +/- 0.25	0.039	pCi/L	

Chemical Yield Summary

Tracer Nuclide	Tracer Known	Tracer Measured	Units	Tracer Yield	Control Limits
U-232	4.44	3.09	pCi/L	70%	30-110%

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y2 - Chemical Yield outside default limits.

* - Duplicate DER not within control limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: *UW0006272-1*

Paragon Analytics, Inc.

PAHs by HPLC Case Narrative

NMED DOE Oversight Bureau

HRMB 6.29.00

Order Number - 0006272

1. This report consists of 2 water samples received by Paragon on 6/30/2000.

2. These samples were extracted and analyzed according to SW-846, 3rd Edition procedures. Specifically, the water samples were extracted using continuous liquid-liquid extractors, based on Method 3520.

3. The extracts were then analyzed using HPLC with UV and fluorescence detectors with a reverse phase C18 column according to protocols based on Method 8310. All compounds are analyzed using UV at 254 nm. Confirmation is performed for positive results using the fluorescence detector or confirmed by UV at 280 nm for those compounds that do not respond to the fluorescence detector. The quantitation of each analyte is usually taken from the detector that exhibits the fewest interferences. For compounds that only respond to UV, the result is taken from the wavelength that exhibits fewer interferences. These quantitations minimize the chances of reporting elevated results based on interferences.

4. All initial and continuing calibration criteria were within acceptance criteria.

   The linear regression equation was used to calculate the analytes' concentrations.

   Manual reintegrations were performed for all samples and standards.

5. The method blank associated with this project was below the reporting limits for all analytes.

6. All laboratory control spike and laboratory control spike duplicate recoveries and RPDs were within the acceptance criteria.

7. Matrix spikes and matrix spike duplicates could not be performed because of insufficient sample. A laboratory control spike and laboratory control spike duplicate were performed instead.

8. All samples were extracted and analyzed within the established holding times.

9. All surrogate recoveries were within acceptable limits with the following exceptions:

Surrogate	Sample	Direction
2-Chloroanthracene	1	low

The sample was re-analyzed to evaluate whether the original outlier was due to matrix effects or laboratory performance. The re-analysis also had surrogates outside the control limits, which suggest the outliers may have been due to matrix effects. See NCR #02755 in the package for further information.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Preston Mathiesen
HPLC Analyst

7/27/00
Date

PAG
Reviewer's Initials

7/27/00
Date

Paragon Analytics, Inc.
Data Qualifier Flags
Chromatography and Mass Spectrometry

U or ND: This flag indicates that the compound was analyzed for but not detected.

J: This flag indicates an estimated value. This flag is used as follows : (1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the reporting limit (RL) but greater than the method detection limit (MDL); and (3) when the retention time data indicate the presence of a compound that meets the GC identification criteria, and the result is less than the RL but greater than the MDL.

B: This flag is used when the analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user. This flag shall be used for a tentatively identified compound (TIC) as well as for a positively identified target compound.

E: This flag identifies compounds whose concentration exceeds the upper level of the calibration range.

***:** This flag indicates that a spike recovery is equal to or outside the control criteria used. (This flag appears when a spike recovery is equal to, and therefore within, the control criteria due to a limitation in the current PAI LIMS system.)

+: This flag indicates that the relative percent difference (RPD) equals or exceeds the control criteria. (This flag appears when the RPD is equal to, and therefore within, the control criteria due to a limitation in the current PAI LIMS system.)

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 0006272
Client Name: NMED DOE Oversight Bureau
Client Project Name:
Client Project Number: HRMB 6.29.00
Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
PA-6.7	0006272-1		WATER	6/29/00	8:30
PA-6.7	0006272-2		WATER	6/29/00	8:30
PA at TM	0006272-3		WATER	6/29/00	9:30
PA at TM	0006272-4		WATER	6/29/00	9:30
PA-10.6	0006272-5		WATER	6/29/00	11:10
PA-10.6	0006272-6		WATER	6/29/00	11:10

Polynuclear Aromatic Hydrocarbons

Method SW8310

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: EX000706-4MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/06/2000
Date Analyzed: 07/19/2000

Prep Batch: EX000706-4
QCBatchID: EX000706-4-1
Run ID: HP000718-21
Cleanup: NONE
Basis: N/A

Sample Aliquot: 1000 ML
Final Volume: 1 ML
Result Units: UG/L
File Name: 0718B015

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
91-20-3	NAPHTHALENE	1	0.5	0.5	U	
208-96-8	ACENAPHTHYLENE	1	1	1	U	
90-12-0	1-METHYLNAPHTHALENE	1	1	1	U	
91-57-6	2-METHYLNAPHTHALENE	1	1	1	U	
83-32-9	ACENAPHTHENE	1	1	1	U	
86-73-7	FLUORENE	1	0.1	0.1	U	
85-01-8	PHENANTHRENE	1	0.05	0.05	U	
120-12-7	ANTHRACENE	1	0.1	0.1	U	
206-44-0	FLUORANTHENE	1	0.1	0.1	U	
129-00-0	PYRENE	1	0.05	0.05	U	
56-55-3	BENZO(A)ANTHRACENE	1	0.05	0.05	U	
218-01-9	CHRYSENE	1	0.05	0.05	U	
205-99-2	BENZO(B)FLUORANTHENE	1	0.1	0.1	U	
207-08-9	BENZO(K)FLUORANTHENE	1	0.05	0.05	U	
50-32-8	BENZO(A)PYRENE	1	0.1	0.1	U	
53-70-3	DIBENZO(A,H)ANTHRACENE	1	0.1	0.1	U	
191-24-2	BENZO(G,H,I)PERYLENE	1	0.1	0.1	U	
193-39-5	INDENO(1,2,3-CD)PYRENE	1	0.1	0.1	U	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
17135-78-3	2-CHLOROANTHRACENE	0.951		1	95	35 - 119

Data Package ID: *HP0006272-1*

Polynuclear Aromatic Hydrocarbons

Method SW8310

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-6.7
Lab ID: 0006272-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 06-Jul-00
Date Analyzed: 19-Jul-00

Prep Batch: EX000706-4
QCBatchID: EX000706-4-1
Run ID: HP000718-21
Cleanup: NONE
Basis: As Received

Sample Aliquot: 700 ML
Final Volume: 1 ML
Result Units: UG/L
File Name: 0718B018

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
91-20-3	NAPHTHALENE	1	3	0.71		
208-96-8	ACENAPHTHYLENE	1	1.4	1.4	U	
90-12-0	1-METHYLNAPHTHALENE	1	1.4	1.4	U	
91-57-6	2-METHYLNAPHTHALENE	1	0.84	1.4	J	
83-32-9	ACENAPHTHENE	1	0.14	1.4	J	
86-73-7	FLUORENE	1	0.14	0.14	U	
85-01-8	PHENANTHRENE	1	0.071	0.071	J	
120-12-7	ANTHRACENE	1	0.14	0.14	U	
206-44-0	FLUORANTHENE	1	0.14	0.14	U	
129-00-0	PYRENE	1	0.071	0.071	U	
56-55-3	BENZO(A)ANTHRACENE	1	0.071	0.071	U	
218-01-9	CHRYSENE	1	0.071	0.071	U	
205-99-2	BENZO(B)FLUORANTHENE	1	0.14	0.14	U	
207-08-9	BENZO(K)FLUORANTHENE	1	0.071	0.071	U	
50-32-8	BENZO(A)PYRENE	1	0.14	0.14	U	
53-70-3	DIBENZO(A,H)ANTHRACENE	1	0.14	0.14	U	
191-24-2	BENZO(G,H,I)PERYLENE	1	0.14	0.14	U	
193-39-5	INDENO(1,2,3-CD)PYRENE	1	0.14	0.14	U	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
17135-78-3	2-CHLOROANTHRACENE	0.331	*	1.43	23	35 - 119

Data Package ID: *HP0006272-1*

Polynuclear Aromatic Hydrocarbons

Method SW8310

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-10.6
Lab ID: 0006272-5

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 06-Jul-00
Date Analyzed: 19-Jul-00

Prep Batch: EX000706-4
QCBatchID: EX000706-4-1
Run ID: HP000718-21
Cleanup: NONE
Basis: As Received

Sample Aliquot: 980 ML
Final Volume: 1 ML
Result Units: UG/L
File Name: 0718B019

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
91-20-3	NAPHTHALENE	1	0.51	0.51	U	
208-96-8	ACENAPHTHYLENE	1	1	1	U	
90-12-0	1-METHYLNAPHTHALENE	1	1	1	U	
91-57-6	2-METHYLNAPHTHALENE	1	0.21	1	J	
83-32-9	ACENAPHTHENE	1	1	1	U	
86-73-7	FLUORENE	1	0.1	0.1	U	
85-01-8	PHENANTHRENE	1	0.051	0.051	U	
120-12-7	ANTHRACENE	1	0.1	0.1	U	
206-44-0	FLUORANTHENE	1	0.1	0.1	U	
129-00-0	PYRENE	1	0.051	0.051	U	
56-55-3	BENZO(A)ANTHRACENE	1	0.051	0.051	U	
218-01-9	CHRYSENE	1	0.051	0.051	U	
205-99-2	BENZO(B)FLUORANTHENE	1	0.1	0.1	U	
207-08-9	BENZO(K)FLUORANTHENE	1	0.051	0.051	U	
50-32-8	BENZO(A)PYRENE	1	0.1	0.1	U	
53-70-3	DIBENZO(A,H)ANTHRACENE	1	0.1	0.1	U	
191-24-2	BENZO(G,H,I)PERYLENE	1	0.1	0.1	U	
193-39-5	INDENO(1,2,3-CD)PYRENE	1	0.1	0.1	U	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
17135-78-3	2-CHLOROANTHRACENE	0.91		1.02	89	35 - 119

Data Package ID: *HP0006272-1*

Polynuclear Aromatic Hydrocarbons

Method SW8310

Blank Spike And Blank Spike Duplicate

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: EX000706-4LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/06/2000
Date Analyzed: 07/19/2000

Prep Batch: EX000706-4
QCBatchID: EX000706-4-1
Run ID: HP000718-21
Cleanup: NONE
Basis: N/A

Sample Aliquot: 1000 ML
Final Volume: 1 ML
Result Units: UG/L

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
91-20-3	NAPHTHALENE	5	3.65	0.5		73	43 - 125%
208-96-8	ACENAPHTHYLENE	10	7.24	1		72	49 - 125%
83-32-9	ACENAPHTHENE	5	3.52	1		70	43 - 130%
86-73-7	FLUORENE	1	0.761	0.1		76	53 - 125%
85-01-8	PHENANTHRENE	0.5	0.406	0.05		81	52 - 129%
120-12-7	ANTHRACENE	0.5	0.401	0.1		80	54 - 125%
206-44-0	FLUORANTHENE	1	0.842	0.1		84	42 - 125%
129-00-0	PYRENE	0.5	0.415	0.05		83	55 - 125%
56-55-3	BENZO(A)ANTHRACENE	0.5	0.454	0.05		91	39 - 135%
218-01-9	CHRYSENE	0.5	0.433	0.05		87	59 - 134%
205-99-2	BENZO(B)FLUORANTHENE	1	0.853	0.1		85	31 - 137%
207-08-9	BENZO(K)FLUORANTHENE	0.5	0.432	0.05		86	60 - 129%
50-32-8	BENZO(A)PYRENE	0.5	0.372	0.1		74	52 - 125%
53-70-3	DIBENZO(A,H)ANTHRACENE	1	0.823	0.1		82	51 - 125%
191-24-2	BENZO(G,H,I)PERYLENE	1	0.81	0.1		81	53 - 125%
193-39-5	INDENO(1,2,3-CD)PYRENE	0.5	0.403	0.1		81	55 - 125%

Data Package ID: *HP0006272-1*

Polynuclear Aromatic Hydrocarbons

Method SW8310

Blank Spike And Blank Spike Duplicate

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: EX000706-4LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/06/2000
Date Analyzed: 07/19/2000

Prep Batch: EX000706-4
QCBatchID: EX000706-4-1
Run ID: HP000718-21
Cleanup: NONE
Basis: N/A

Sample Aliquot: 1000 ML
Final Volume: 1 ML
Result Units: UG/L

Lab ID: EX000706-4LCSD

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	LCSD % Rec.	Result Qualifier	RPD	RPD Limits
91-20-3	NAPHTHALENE	5	3.8	0.5	76		4	30
208-96-8	ACENAPHTHYLENE	10	7.47	1	75		3	30
83-32-9	ACENAPHTHENE	5	3.77	1	75		7	30
86-73-7	FLUORENE	1	0.784	0.1	78		3	30
85-01-8	PHENANTHRENE	0.5	0.413	0.05	83		2	30
120-12-7	ANTHRACENE	0.5	0.419	0.1	84		4	30
206-44-0	FLUORANTHENE	1	0.878	0.1	88		4	30
129-00-0	PYRENE	0.5	0.444	0.05	89		7	30
56-55-3	BENZO(A)ANTHRACENE	0.5	0.451	0.05	90		1	30
218-01-9	CHRYSENE	0.5	0.442	0.05	88		2	30
205-99-2	BENZO(B)FLUORANTHENE	1	0.875	0.1	87		2	30
207-08-9	BENZO(K)FLUORANTHENE	0.5	0.438	0.05	88		2	30
50-32-8	BENZO(A)PYRENE	0.5	0.4	0.1	80		7	30
53-70-3	DIBENZO(A,H)ANTHRACENE	1	0.879	0.1	88		7	30
191-24-2	BENZO(G,H,I)PERYLENE	1	0.862	0.1	86		6	30
193-39-5	INDENO(1,2,3-CD)PYRENE	0.5	0.433	0.1	87		7	30

Surrogate Recovery LCS/LCSD

CASNO	Target Analyte	Spike Added	LCS % Rec.	LCS Flag	LCSD % Rec.	LCSD Flag	Control Limits
17135-78-3	2-CHLOROANTHRACENE	1	92		93		35 - 119

Data Package ID: *HP0006272-1*

NCR # 02755

CONTROLLED

PARAGON ANALYTICS, INC.

NON-CONFORMANCE REPORT

Initiated by: PRESTON MATHIESEN
Date Initiated 7/26/00

Method/QA Procedure 8310
Workorders Affected 0006272
Clients NMED

SECTION I

TYPE OF EVENT:	SPECIFY
✓ 1. Spike/Surrogate Criteria Not Met	SURROGATE RECOVERY IS LOW IN SAMPLE 1
2. Calibration Criteria Not Met (Type of Equipment)	RECOVERY IS 23%, LOW LIMIT IS 35%
3. Lab Contamination	
4. Method Requirements Not Met	extract injected twice
5. Purchased Materials Do Not Meet Quality Specs	surrogate recovery low both
6. Equipment Failure	times
7. Deviation from QAP, SOP, Method	
8. Other (Specify)	

Client Contacted? (Y / N): Name: Date: Time:

SECTION II

CORRRECTIVE ACTION TAKEN:

1. Submit for Re-Extraction (Re-work)
2. Recalibrate (Re-work)
3. Re-analyze (Re-work)
4. Return to Vendor/Reject
5. Service call/return for repair
6. Retrain
7. ✓ Document in Narrative
8. Other, describe

Approved by: [signature]

SECTION III

REQUEST FOR REWORK IN SAMPLE PREP OR DIGESTION

Initial date prepared, Page #
Date for Rework, Page #
Submitted by N/A
Received by
Outcome of Re-analysis

Approved by:

DISPOSITION Use as is ☑ Reject ☐ Repair ☐

out of hold at this time, complex matrix
no sample volume left in extraction
matrix caused low recovery likely

SIGNATURES

Approved By [signature] Date 7/26/00 (Project Mgr)
Verification of Disposition [signature] Date 7/26/2000 (Dept Supv)
QA Dept Approval [signature] Date 7/26/00 (QA Mgr)

COPIES: ✓ Project Manager ✓ Operations Manager ✓ Department Supervisor

FORM 313FC4.frm (11-20-98)

Paragon Analytics, Inc.

Radiochemistry Case Narrative
Gross Alpha/Beta

NMED DOE Oversight Bureau

HRMB 6.29.00

PAI WO 0006272

1. This report consists of three water samples received by Paragon on 06/30/00.
2. These samples were prepared according to Paragon Analytics, Inc. procedure PAI SOP702R13.
3. The samples were analyzed for gross alpha and beta activity by gas flow proportional counting according to Paragon Analytics, Inc. procedure PAI SOP724R6. The analyses were completed on 08/10/00. Gross alpha results are referenced to ^{241}Am. Gross beta results are referenced to ^{90}Sr/Y.
4. The analysis results for these samples are reported in units of pCi/L. Sample PA-10.6 (PAI ID 0006272-05) was not filtered prior to analysis. Samples PA-6.7 and PA at TM (PAI ID 0006272-01 and -03) were filtered prior to analysis, using grade 313 fluted filter paper. Please refer to QASS 201106.
5. Gross Beta activity is reported in the associated method blank above the calculated sample specific minimum detectable concentration (MDC). The measured blank activity is below the requested MDC of 1.5 pCi/L. Results should be compared to the method blank activity to determine the validity of the measurement.
6. No further anomalous situations were noted during the preparation and analysis of these samples. All remaining quality control criteria were met.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Julie Ellingson
Julie Ellingson
Radiochemistry Instrument Technician

8/11/00
Date

Renee Valley
Radiochemistry Final Data Review

8/15/00
Date

ALPHA/BETA ANALYSIS RESULTS SUMMARY

Method 900.0/9310 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 08/01/2000

Client Name: Shared QC

Date Analyzed : 08/09/2000

Client Project ID: Blank

Sample Matrix : Water

Lab Sample ID Series: 00-07-150

Count Duration: 1000 Min.

Analyzed By : JE

Client Sample ID	Lab Sample ID	Gross Alpha (pCi/liter)	Gross Beta (pCi/liter)
Blank	07-150-B1	0.15 ± 0.46	1.09 ± 0.63
Decision Level	07-150-B1	0.38	0.49

Reported Uncertainties are the Estimated Total Propagated Uncertainties (2σ). See PAI SOP743 for TPU determinations.

Reported Activities are the calculated net activities, not truncated or censored by an *a priori* detection limit estimate. Sample results should be compared to the decision level calculated from the appropriate blank.

These samples were prepared using PAI SOP702 and analyzed using PAI SOP724.

Remarks:

Blank is shared for workorders 0007150, 0007200, and 0006272.

ALPHA/BETA ANALYSIS MDA SUMMARY

Method 900.0/9310 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 08/01/2000

Client Name: Shared QC

Date Analyzed : 08/09/2000

Client Project ID: Blank

Sample Matrix : Water

Lab Sample ID Series: 00-07-150

Count Duration: 1000 Min.

Analyzed By : JE

Client Sample ID	Lab Sample ID	Gross Alpha MDA (pCi/liter)	Gross Beta MDA (pCi/liter)
Blank	07-150-B1	0.79	1.0

Reported Uncertainties are the Estimated Total Propagated Uncertainties (2σ).
See PAI SOP743 for TPU determinations.

These samples were prepared using PAI SOP702
and analyzed using PAI SOP724.

Remarks:

Blank is shared for workorders 0007150, 0007200, and 0006272.

GROSS ALPHA/BETA BLANK SPIKE RESULTS

Method 900.0/9310 (Modified)

Lab Name: Paragon Analytics, Inc. Date Collected: 08/01/2000

Client Name: Shared QC Date Analyzed : 08/08/2000

Client Project ID : LCS Sample Matrix : Water

Lab Workorder Number : 00-07-150 Units : pCi/l

Alpha Recovery Data

Lab Sample ID	Alpha Spike Added	Alpha Reported	Percent Recovery	Flag
00-07-150-S1	250.3	222.8	89.0	Pass

Beta Recovery Data

Lab Sample ID	Beta Spike Added	Beta Reported	Percent Recovery	Flag
00-07-150-S1	246.7	263.1	106.6	Pass

PAI sets control limits for gross alpha/beta measurements based on EPA/EMSL Laboratory Intercomparison Control Limits.

Acceptance Range for Percent Recovery of blank spike samples is known ± 30%.

Remarks:

LCS is shared for workorders 0007150, 0007200, and 0006272.

ALPHA/BETA ANALYSIS RESULTS SUMMARY

Method 900.0/9310 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 06/29/2000

Client Name: NMED DOE Oversight Bureau

Date Analyzed : 08/10/2000

Client Project ID: HRMB 6.29.00

Sample Matrix : Water

Lab Sample ID Series: 00-06-272

Count Duration: 1000 Min.

Analyzed By : JE

Client Sample ID	Lab Sample ID	Gross Alpha (pCi/liter)	Gross Beta (pCi/liter)
PA-6.7	06-272-01	7.1 ± 1.3	44.8 ± 6.2
PA at TM	06-272-03	8.1 ± 1.5	43.4 ± 6.0
PA-10.6	06-272-05	1.53 ± 0.59	19.2 ± 2.8
PA-10.6	06-272-D1	2.08 ± 0.59	17.3 ± 2.5

Reported Uncertainties are the Estimated Total Propagated Uncertainties (2σ). See PAI SOP743 for TPU determinations.

Reported Activities are the calculated net activities, not truncated or censored by an *a priori* detection limit estimate. Sample results should be compared to the decision level calculated from the appropriate blank.

These samples were prepared using PAI SOP702 and analyzed using PAI SOP724.

Remarks:

Sample 00-06-272-D1 is a duplicate of sample 00-06-272-05.

ALPHA/BETA ANALYSIS MDA SUMMARY

Method 900.0/9310 (Modified)

Lab Name: Paragon Analytics, Inc.

Date Collected: 06/29/2000

Client Name: NMED DOE Oversight Bureau

Date Analyzed : 08/10/2000

Client Project ID: HRMB 6.29.00

Sample Matrix : Water

Lab Sample ID Series: 00-06-272

Count Duration: 1000 Min.

Analyzed By : JE

Client Sample ID	Lab Sample ID	Gross Alpha MDA (pCi/liter)	Gross Beta MDA (pCi/liter)
PA-6.7	06-272-01	1.0	1.3
PA at TM	06-272-03	1.0	1.0
PA-10.6	06-272-05	0.83	1.0
PA-10.6	06-272-D1	0.71	0.96

Reported Uncertainties are the Estimated Total Propagated Uncertainties (2σ).
See PAI SOP743 for TPU determinations.

These samples were prepared using PAI SOP702
and analyzed using PAI SOP724.

Remarks:

Sample 00-06-272-D1 is a duplicate of sample 00-06-272-05.

Paragon Analytics, Inc.

QUALITY ASSURANCE SUMMARY SHEET

PAI W.O. #/BATCH 00-06-272
TEST α/β
METHOD —
SOP/REV (PREP) 702 R13
SOP/REV (ANAL) —

Briefly document any QA or other problems or deviations associated with the analysis of samples. Problems could result from: log-in, color, odor, dilution, consistency, scheduling, equipment, or instrumentation, or may include documentation of minor deviations necessary due to unique DQO's or sample characteristics.

Due to a large amount of sediment in samples 00-06-272-01 and -03, these samples were filtered with grade 313 fluted filter paper for the gamma fraction. The gamma fraction was used for alpha/beta analysis.

MG 8/11/00

TECHNICIAN/ANALYST Melissa Zytkd DATE 8/11/00
RESOURCE MANAGER [illegible] DATE 8/11/00

Paragon Analytics, Inc.

Explosives by HPLC Case Narrative

NMED DOE Oversight Bureau

HRMB 6.29.00

Order Number - 0006272

1. This report consists of 2 water samples received by Paragon on 06/30/2000.

2. These samples were extracted and analyzed according to SW-846, 3rd Edition procedures. Specifically, the samples were extracted using Paragon Analytics, Inc. Standard Operating Procedure 665 Revision 1 based on Method 8330.

3. Extracts from aqueous samples are prepared for analysis by mixing with reagent grade water (1 part water to 1 part extract). Our reporting limits for water samples, as well as all results for water samples are based on the final volume of the extract/reagent water mixture (typically 3mL) and not on the original volume of extract (typically 1.5mL).
   The water extracts were then analyzed using HPLC with a UV detector (254nm) and a C_{18} column according to Paragon Analytics, Inc. Standard Operating Procedure 404 Revision 8 based on SW-846 Method 8330. All positive results were then confirmed on a cyano column. Quantitations were taken from the primary column. The results reported are based upon regression equations calculated from a six point initial calibration.

4. All initial and continuing calibration criteria were within acceptance criteria.

5. The method blank associated with this project was below the reporting limits for all analytes.

6. All laboratory control spike and laboratory control spike duplicate criteria were met with the following exception:

Spiked Compound	QC Sample	Direction
1,3,5-trinitrobenzene	LCS	low

There was not sufficient sample remaining to perform a re-extraction. See NCR # 2762 at the end of the report.

7. Matrix spikes and matrix spike duplicates could not be performed because of insufficient sample. A laboratory control spike and laboratory control spike duplicate were performed instead.

8. All samples were extracted and analyzed within the established holding times.

9. All surrogate recoveries were within acceptance criteria.

10. Manual integrations were performed for all samples. Chromatograms prior to manual integrations are included in the Miscellaneous section. Chromatograms showing manual integrations are included in the Raw Data sections for calibrations, samples and quality control samples.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Eddy Hammerquist — 7-28-00

Eddy Hammerquist
Senior Organic Chemist
Date

PAG — 28 July 2000

Reviewer's Initials
Date

Paragon Analytics, Inc.
Data Qualifier Flags
Chromatography and Mass Spectrometry

U or ND: This flag indicates that the compound was analyzed for but not detected.

J: This flag indicates an estimated value. This flag is used as follows : (1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the reporting limit (RL) but greater than the method detection limit (MDL); and (3) when the retention time data indicate the presence of a compound that meets the GC identification criteria, and the result is less than the RL but greater than the MDL.

B: This flag is used when the analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user. This flag shall be used for a tentatively identified compound (TIC) as well as for a positively identified target compound.

E: This flag identifies compounds whose concentration exceeds the upper level of the calibration range.

***:** This flag indicates that a spike recovery is equal to or outside the control criteria used. (This flag appears when a spike recovery is equal to, and therefore within, the control criteria due to a limitation in the current PAI LIMS system.)

+: This flag indicates that the relative percent difference (RPD) equals or exceeds the control criteria. (This flag appears when the RPD is equal to, and therefore within, the control criteria due to a limitation in the current PAI LIMS system.)

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 0006272
Client Name: NMED DOE Oversight Bureau
Client Project Name:
Client Project Number: HRMB 6.29.00
Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
PA-6.7	0006272-1		WATER	6/29/00	8:30
PA-6.7	0006272-2		WATER	6/29/00	8:30
PA at TM	0006272-3		WATER	6/29/00	9:30
PA at TM	0006272-4		WATER	6/29/00	9:30
PA-10.6	0006272-5		WATER	6/29/00	11:10
PA-10.6	0006272-6		WATER	6/29/00	11:10

HPLC Explosives

Method SW8330
Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: EX000706-1MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/06/2000
Date Analyzed: 07/16/2000

Prep Batch: EX000706-1
QCBatchID: EX000706-1-1
Run ID: HP000715-34
Cleanup: NONE
Basis: N/A

Sample Aliquot: 350 ML
Final Volume: 3 ML
Result Units: UG/L
File Name: 07150035

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
2691-41-0	HMX	1	1	1	U	
121-82-4	RDX	1	0.84	0.84	U	
99-35-4	1,3,5-TRINITROBENZENE	1	0.26	0.26	U	
99-65-0	1,3-DINITROBENZENE	1	0.25	0.25	U	
479-45-8	TETRYL	1	1	1	U	
98-95-3	NITROBENZENE	1	1	1	U	
118-96-7	2,4,6-TRINITROTOLUENE	1	0.25	0.25	U	
1946-51-0	4-AMINO-2,6-DNT	1	0.25	0.25	U	
35572-78-2	2-AMINO-4,6-DNT	1	0.25	0.25	U	
606-20-2	2,6-DINITROTOLUENE	1	0.25	0.25	U	
121-14-2	2,4-DINITROTOLUENE	1	0.25	0.25	U	
88-72-2	2-NITROTOLUENE	1	1	1	U	
99-99-0	4-NITROTOLUENE	1	1	1	U	
99-08-1	3-NITROTOLUENE	1	1	1	U	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
100-25-4	1,4-DINITROBENZENE	1.82		2.14	85	36 - 111

Data Package ID: *HP0006272-2*

HPLC Explosives

Method SW8330

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID: PA-6.7
Lab ID: 0006272-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 06-Jul-00
Date Analyzed: 16-Jul-00

Prep Batch: EX000706-1
QCBatchID: EX000706-1-1
Run ID: HP000715-34
Cleanup: NONE
Basis: As Receivied

Sample Aliquot: 350 ML
Final Volume: 3 ML
Result Units: UG/L
File Name: 07150038

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
2691-41-0	HMX	1	3.6	1		
121-82-4	RDX	1	0.84	0.84	U	
99-35-4	1,3,5-TRINITROBENZENE	1	0.58	0.26		
99-65-0	1,3-DINITROBENZENE	1	5.5	0.25		
479-45-8	TETRYL	1	1	1	U	
98-95-3	NITROBENZENE	1	12	1		
118-96-7	2,4,6-TRINITROTOLUENE	1	0.25	0.25	U	
1946-51-0	4-AMINO-2,6-DNT	1	0.25	0.25	U	
35572-78-2	2-AMINO-4,6-DNT	1	0.25	0.25	U	
606-20-2	2,6-DINITROTOLUENE	1	0.11	0.25	J	
121-14-2	2,4-DINITROTOLUENE	1	0.059	0.25	J	
88-72-2	2-NITROTOLUENE	1	1	1	U	
99-99-0	4-NITROTOLUENE	1	1	1	U	
99-08-1	3-NITROTOLUENE	1	0.25	1	J	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
100-25-4	1,4-DINITROBENZENE	1.69		2.14	79	36 - 111

Data Package ID: *HP0006272-2*

HPLC Explosives

Method SW8330

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Field ID:	PA at TM
Lab ID:	0006272-3

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jun-00
Date Extracted: 06-Jul-00
Date Analyzed: 16-Jul-00

Prep Batch: EX000706-1
QCBatchID: EX000706-1-1
Run ID: HP000715-34
Cleanup: NONE
Basis: As Receivied

Sample Aliquot: 350 ML
Final Volume: 3 ML
Result Units: UG/L
File Name: 07150039

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
2691-41-0	HMX	1	1.3	1		
121-82-4	RDX	1	0.84	0.84	U	
99-35-4	1,3,5-TRINITROBENZENE	1	0.32	0.26		
99-65-0	1,3-DINITROBENZENE	1	0.25	0.25	U	
479-45-8	TETRYL	1	1	1	U	
98-95-3	NITROBENZENE	1	15	1		
118-96-7	2,4,6-TRINITROTOLUENE	1	0.25	0.25	U	
1946-51-0	4-AMINO-2,6-DNT	1	0.25	0.25	U	
35572-78-2	2-AMINO-4,6-DNT	1	0.25	0.25	U	
606-20-2	2,6-DINITROTOLUENE	1	0.25	0.25	U	
121-14-2	2,4-DINITROTOLUENE	1	0.07	0.25	J	
88-72-2	2-NITROTOLUENE	1	1	1	U	
99-99-0	4-NITROTOLUENE	1	1	1	U	
99-08-1	3-NITROTOLUENE	1	0.17	1	J	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
100-25-4	1,4-DINITROBENZENE	1.53		2.14	71	36 - 111

Data Package ID: *HP0006272-2*

HPLC Explosives

Method SW8330

Blank Spike And Blank Spike Duplicate

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: EX000706-1LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/06/2000
Date Analyzed: 07/16/2000

Prep Batch: EX000706-1
QCBatchID: EX000706-1-1
Run ID: HP000715-34
Cleanup: NONE
Basis: N/A

Sample Aliquot: 350 ML
Final Volume: 3 ML
Result Units: UG/L

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
2691-41-0	HMX	4.29	3.54	1		83	59 - 101%
121-82-4	RDX	4.29	4	0.84		93	52 - 107%
99-35-4	1,3,5-TRINITROBENZENE	4.29	1.83	0.26	*	43	53 - 95%
99-65-0	1,3-DINITROBENZENE	4.29	3.55	0.25		83	51 - 100%
479-45-8	TETRYL	4.29	1.39	1		32	20 - 99%
98-95-3	NITROBENZENE	4.29	3.29	1		77	45 - 98%
118-96-7	2,4,6-TRINITROTOLUENE	4.29	3	0.25		70	47 - 103%
1946-51-0	4-AMINO-2,6-DNT	4.29	4.03	0.25		94	62 - 105%
35572-78-2	2-AMINO-4,6-DNT	4.29	3.77	0.25		88	52 - 109%
606-20-2	2,6-DINITROTOLUENE	4.29	3.88	0.25		90	52 - 102%
121-14-2	2,4-DINITROTOLUENE	4.29	3.71	0.25		87	52 - 105%
88-72-2	2-NITROTOLUENE	4.29	3.8	1		89	47 - 107%
99-99-0	4-NITROTOLUENE	4.29	3.85	1		90	41 - 115%
99-08-1	3-NITROTOLUENE	4.29	3.85	1		90	46 - 111%

Data Package ID: *HP0006272-2*

HPLC Explosives

Method SW8330

Blank Spike And Blank Spike Duplicate

Lab Name: Paragon Analytics, Inc.
Work Order Number: 0006272
Client Name: NMED DOE Oversight Bureau
ClientProject ID: HRMB 6.29.00

Lab ID: EX000706-1LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 07/06/2000
Date Analyzed: 07/16/2000

Prep Batch: EX000706-1
QCBatchID: EX000706-1-1
Run ID: HP000715-34
Cleanup: NONE
Basis: N/A

Sample Aliquot: 350 ML
Final Volume: 3 ML
Result Units: UG/L

Lab ID: EX000706-1LCSD

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	LCSD % Rec.	Result Qualifier	RPD	RPD Limits
2691-41-0	HMX	4.29	3.72	1	87		5	30
121-82-4	RDX	4.29	3.9	0.84	91		3	30
99-35-4	1,3,5-TRINITROBENZENE	4.29	3.08	0.26	72	+	51	30
99-65-0	1,3-DINITROBENZENE	4.29	3.72	0.25	87		5	30
479-45-8	TETRYL	4.29	1.67	1	39		18	30
98-95-3	NITROBENZENE	4.29	3.54	1	83		8	30
118-96-7	2,4,6-TRINITROTOLUENE	4.29	3.47	0.25	81		15	30
1946-51-0	4-AMINO-2,6-DNT	4.29	4.17	0.25	97		3	30
35572-78-2	2-AMINO-4,6-DNT	4.29	3.98	0.25	93		5	30
606-20-2	2,6-DINITROTOLUENE	4.29	4.04	0.25	94		4	30
121-14-2	2,4-DINITROTOLUENE	4.29	3.85	0.25	90		4	30
88-72-2	2-NITROTOLUENE	4.29	3.91	1	91		3	30
99-99-0	4-NITROTOLUENE	4.29	3.98	1	93		3	30
99-08-1	3-NITROTOLUENE	4.29	4.01	1	94		4	30

Surrogate Recovery LCS/LCSD

CASNO	Target Analyte	Spike Added	LCS % Rec.	LCS Flag	LCSD % Rec.	LCSD Flag	Control Limits
100-25-4	1,4-DINITROBENZENE	2.14	86		88		36 - 111

Data Package ID: *HP0006272-2*

NCR # 02762

CONTROLLED

PARAGON ANALYTICS, INC.

NON-CONFORMANCE REPORT

Initiated by: E. Hammerquist
Date Initiated 7-27-00

Method/QA Procedure 8330
Workorders Affected 0006272
Clients NMED

SECTION I

TYPE OF EVENT: SPECIFY

1. Spike/Surrogate Criteria Not Met — water samples: 1,3,5-Trinitrobenzene low in LCS @ 43% recovery (control limits = 53%-95%)
2. Calibration Criteria Not Met (Type of Equipment)
3. Lab Contamination — All surrogates within control.
4. Method Requirements Not Met — LCSD all cmpds w/in control.
5. Purchased Materials Do Not Meet Quality Specs — 1,3,5-TNB found in both samples.
6. Equipment Failure — NO samples left to re-extract.
7. Deviation from QAP, SOP, Method
8. Other (Specify)

Client Contacted? (Y / N): Name: Date: Time:

SECTION II

CORRRECTIVE ACTION TAKEN:

1. Submit for Re-Extraction (Re-work)
2. Recalibrate (Re-work)
3. Re-analyze (Re-work)
4. Return to Vendor/Reject
5. Service call/return for repair
6. Retrain
7. Document in Narrative
8. Other, describe

Approved by: Narrate possible low bias to 135TNB results. No sample remain for re-

SECTION III

REQUEST FOR REWORK IN SAMPLE PREP OR DIGESTION

Initial date prepared, Page #
Date for Rework, Page #
Submitted by
Received by
Outcome of Re-analysis

Approved by:

DISPOSITION Use as is ☒ Reject ☐ Repair ☐

SIGNATURES

Approved By Date 7/27/00 (Project Mgr)
Verification of Disposition Date 7/27/00 (Dept Supv)
QA Dept Approval Date 07.28.00 (QA Mgr)

COPIES: ✓ Project Manager ___ Operations Manager ✓ Department Supervisor FORM 313FC4.frm (11-20-98)

Paragon Analytics, Inc.

Radiochemistry Case Narrative
Gamma Spectroscopy

NMED DOE Oversight Bureau

HRMB 6.29.00

Paragon Work Order 0006272

1. This report consists of analysis results for 3 water samples received by Paragon on 06/30/00. The analysis results for these samples are reported in units of pCi/L. Client sample PA-10.6 (PAI ID 0006272-5) was not filtered prior to analysis.

2. These samples were prepared according to Paragon Analytics, Inc. procedure PAI SOP739R3.

3. The samples were analyzed for the presence of gamma emitting radionuclides according to Paragon Analytics, Inc. procedure PAI SOP713R5. The analyses were completed on 07/30/00.

4. An elevated level of activity for K-40 was detected in the method blank associated with this batch. The K-40 results for samples PA-6.7 and PA-10.6 (PAI IDs 0006272-1 and -5) were less than five times that measured in the blank. The K-40 nuclide has been given a "B2" flag on the final reports for these two samples. Sample activities should be compared to that of the blank to determine their validity. Data is submitted without further qualification.

5. The duplicate analysis associated with this batch is shared with work order 0006226 and has been included in this report.

6. Duplicate analysis results elevated above the DER warning limit of 1.42 (2sigma) have been flagged as "W" for Warn. Nuclide DER values exceeding 2.14 (3sigma) have been flagged "H" denoting 'outside limits, high'. For gamma spectroscopic analysis SOP 715 R10 states that 75% of the nuclides must be within the 2 sigma control limit to meet DER or RPD requirements. Elevated DER may be attributable to sample non-homogeneity.

7. Activity concentrations above the 2σ TPU and / or the sample specific MDC are reported in some instances where minimum nuclide identification criteria are not met. Such tentative identifications result when the software attempts to calculate 'forced-fit' activity concentrations for analytes where the 'diagnostic' or key peak for a nuclide is not present above the critical level count rate or where applicable nuclide fraction limits are not satisfied. Nuclides with reported activities greater than the MDC or the associated TPU which did not meet minimum identification criteria have been flagged with a "TI" qualifier.

8. Due to software limitations some samples may report activity concentrations of zero with very large associated Total Propagated Uncertainties. This is a result of the reporting

software attempting to store uncertainty values as a fraction of the sample activity. In cases of zero activity nuclides the software attempts to divide the counting uncertainty by zero. In these cases the Total Propagated Uncertainty is incorrectly reported. The associated Minimum Detectable Concentration, however, is calculated properly. The final analytical results receive a "U" flag and should be interpreted as a "non-detect" below the reported MDC.

9. No problems were encountered with either the client samples or the associated quality control samples. All quality control criteria were met.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Radiochemistry Instrument Technician	8/21/00 Date
Radiochemistry Final Data Review	8/22/00 Date

Gamma Spectroscopy Results

Method PAI 713R5

Sample Results

Reported on: Monday, August 21, 2000 09:57:18

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: HRMB 6.29.00

Laboratory Name: Paragon Analytics, Inc.

PAI Work Order: 0006272

Field ID: PA-6.7
Lab ID: 0006272-1

Sample Matrix: Water
Date Prepared: 21-Jul-00
Prep SOP: PAI 739R3
Prep Batch: GS00358

Date Collected: 29-Jun-00
Date Analyzed: 29-Jul-00
Analytical SOP: PAI 713R5

Final Aliquot: 1.000
Aliquot Units: L
Report Basis: Filtered
Count Time (min.): 1000

Target Nuclide	Result +/- 2 s TPU	MDC	Reporting Units	Lab Qualifier
Ac-228	-1 +/- 16	18	pCi/L	U
Ag-110m	1.3 +/- 2.4	3.7	pCi/L	U
Al-26	0 +/- 0	6.1	pCi/L	SQ
Am-241	1 +/- 14	25	pCi/L	U
Be-7	-6 +/- 40	47	pCi/L	U
Bi-212	2 +/- 20	34	pCi/L	U
Bi-214	10.3 +/- 6.3	11	pCi/L	U
Ce-139	0.6 +/- 2.5	3.7	pCi/L	U
Ce-144	6 +/- 15	24	pCi/L	U
Co-56	1.2 +/- 4.1	5.4	pCi/L	U
Co-57	0.5 +/- 2.0	3.1	pCi/L	U
Co-58	-0.6 +/- 4.0	5.1	pCi/L	U
Co-60	0.4 +/- 2.4	4.2	pCi/L	U
Cr-51	-18 +/- 84	67	pCi/L	U
Cs-134	1.6 +/- 2.3	3.7	pCi/L	U
Cs-137	-1.0 +/- 2.4	4.0	pCi/L	U
Eu-152	2.3 +/- 7.1	12	pCi/L	U
Eu-154	-6 +/- 14	24	pCi/L	U
Eu-155	2.5 +/- 7.8	13	pCi/L	U
Fe-59	-2 +/- 12	13	pCi/L	U
I-131	0 +/- 410	53	pCi/L	U
K-40	97 +/- 68	75	pCi/L	B2
Mn-54	-0.3 +/- 2.5	4.0	pCi/L	U
Na-22	0.5 +/- 2.6	4.4	pCi/L	U
Nb-94	0.9 +/- 2.5	4.3	pCi/L	U
Nb-95	-0.9 +/- 4.4	5.5	pCi/L	U
Pa-234m	90 +/- 400	700	pCi/L	U
Pb-212	0.1 +/- 3.6	6.5	pCi/L	U
Pb-214	-3.6 +/- 9.1	10	pCi/L	U
Ru-106	-1 +/- 24	40	pCi/L	U
Sb-124	-0.9 +/- 4.4	5.3	pCi/L	U

Data Package ID: *GSW0006272-1*

Gamma Spectroscopy Results

Method PAI 713R5

Sample Results

Reported on: Monday, August 21, 2000 09:57:18

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: HRMB 6.29.00

Laboratory Name: Paragon Analytics, Inc.

PAI Work Order: 0006272

Field ID: PA-6.7
Lab ID: 0006272-1

Sample Matrix: Water
Date Prepared: 21-Jul-00
Prep SOP: PAI 739R3
Prep Batch: GS00358

Date Collected: 29-Jun-00
Date Analyzed: 29-Jul-00
Analytical SOP: PAI 713R5

Final Aliquot: 1.000
Aliquot Units: L
Report Basis: Filtered
Count Time (min.): 1000

Target Nuclide	Result +/- 2 s TPU	MDC	Reporting Units	Lab Qualifier
Sb-125	-1.4 +/- 6.6	11	pCi/L	U
Sc-46	-0.7 +/- 3.7	5.0	pCi/L	U
Sr-85	7.6 +/- 5.5	6.5	pCi/L	TI
Th-227	-10 +/- 340	26	pCi/L	U
Th-234	370 +/- 140	76	pCi/L	TI
Tl-208	-2.3 +/- 5.6	4.7	pCi/L	U
U-235	82 +/- 28	27	pCi/L	TI
Zn-65	-0.7 +/- 5.8	9.3	pCi/L	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

Y2 - Chemical Yield outside default limits.

* - Duplicate DER not within control limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

SQ - Spectral interference prevents accurate quantitation.

SI - Identification is tentative due to spectral interference.

TI - Nuclide identification is tentative.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: *GSW0006272-1*

Gamma Spectroscopy Results

Method PAI 713R5

Sample Results

Reported on: Monday, August 21, 2000 09:57:18

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: HRMB 6.29.00

Laboratory Name: Paragon Analytics, Inc.

PAI Work Order: 0006272

Field ID: PA at TM
Lab ID: 0006272-3

Sample Matrix: Water
Date Prepared: 21-Jul-00
Prep SOP: PAI 739R3
Prep Batch: GS00358

Date Collected: 29-Jun-00
Date Analyzed: 30-Jul-00
Analytical SOP: PAI 713R5

Final Aliquot: 1.000
Aliquot Units: L
Report Basis: Filtered
Count Time (min.): 1000

Target Nuclide	Result +/- 2 s TPU	MDC	Reporting Units	Lab Qualifier
Ac-228	9 +/- 17	20	pCi/L	U
Ag-110m	-0.7 +/- 2.9	4.5	pCi/L	U
Al-26	0 +/- 0	6.4	pCi/L	SQ
Am-241	-1 +/- 14	24	pCi/L	U
Be-7	0 +/- 43	50	pCi/L	U
Bi-212	0 +/- 22	37	pCi/L	U
Bi-214	17 +/- 13	12	pCi/L	
Ce-139	0.6 +/- 2.5	3.7	pCi/L	U
Ce-144	0 +/- 17	26	pCi/L	U
Co-56	3.1 +/- 3.9	6.2	pCi/L	U
Co-57	0.1 +/- 2.2	3.5	pCi/L	U
Co-58	-0.6 +/- 4.7	5.9	pCi/L	U
Co-60	1.4 +/- 2.8	4.7	pCi/L	U
Cr-51	-6 +/- 86	67	pCi/L	U
Cs-134	-0.4 +/- 2.5	4.2	pCi/L	U
✓ Cs-137	-0.5 +/- 2.6	4.5	pCi/L	U
Eu-152	0.2 +/- 7.9	13	pCi/L	U
Eu-154	3 +/- 14	25	pCi/L	U
Eu-155	0.7 +/- 8.7	15	pCi/L	U
Fe-59	-2 +/- 14	15	pCi/L	U
I-131	10 +/- 450	53	pCi/L	U
K-40	69 +/- 47	74	pCi/L	U
Mn-54	1.0 +/- 2.9	4.7	pCi/L	U
Na-22	0.6 +/- 2.8	4.7	pCi/L	U
Nb-94	0.7 +/- 2.6	4.4	pCi/L	U
Nb-95	-0.8 +/- 4.6	5.6	pCi/L	U
Pa-234m	60 +/- 440	770	pCi/L	U
Pb-212	5.4 +/- 8.3	8.3	pCi/L	U
Pb-214	1.4 +/- 9.9	10	pCi/L	U
Ru-106	5 +/- 25	40	pCi/L	U
Sb-124	0.2 +/- 4.8	5.8	pCi/L	U

Data Package ID: *GSW0006272-1*

Gamma Spectroscopy Results

Method PAI 713R5

Sample Results

Reported on: Monday, August 21, 2000 09:57:18

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: HRMB 6.29.00

Laboratory Name: Paragon Analytics, Inc.

PAI Work Order: 0006272

Field ID: PA at TM
Lab ID: 0006272-3

Sample Matrix: Water
Date Prepared: 21-Jul-00
Prep SOP: PAI 739R3
Prep Batch: GS00358

Date Collected: 29-Jun-00
Date Analyzed: 30-Jul-00
Analytical SOP: PAI 713R5

Final Aliquot: 1.000
Aliquot Units: L
Report Basis: Filtered
Count Time (min.): 1000

Target Nuclide	Result +/- 2 s TPU	MDC	Reporting Units	Lab Qualifier
Sb-125	-3.0 +/- 7.0	12	pCi/L	U
Sc-46	1.1 +/- 4.1	5.5	pCi/L	U
Sr-85	5.6 +/- 5.7	6.7	pCi/L	U
Th-227	3 +/- 14	24	pCi/L	U
Th-234	157 +/- 90	69	pCi/L	TI
Tl-208	9.1 +/- 6.3	5.8	pCi/L	
U-235	-100 +/- 2600	28	pCi/L	U
Zn-65	1.4 +/- 6.1	9.7	pCi/L	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

Y2 - Chemical Yield outside default limits.

* - Duplicate DER not within control limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

SQ - Spectral interference prevents accurate quantitation.

SI - Identification is tentative due to spectral interference.

TI - Nuclide identification is tentative.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: *GSW0006272-1*

Gamma Spectroscopy Results

Method PAI 713R5

Sample Results

Reported on: Monday, August 21, 2000 09:57:19

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: HRMB 6.29.00

Laboratory Name: Paragon Analytics, Inc.

PAI Work Order: 0006272

Field ID: PA-10.6
Lab ID: 0006272-5

Sample Matrix: Water
Date Prepared: 21-Jul-00
Prep SOP: PAI 739R3
Prep Batch: GS00358

Date Collected: 29-Jun-00
Date Analyzed: 30-Jul-00
Analytical SOP: PAI 713R5

Final Aliquot: 1.000
Aliquot Units: L
Report Basis: Total
Count Time (min.): 1000

Target Nuclide	Result +/- 2 s TPU	MDC	Reporting Units	Lab Qualifier
Ac-228	-15 +/- 38	17	pCi/L	U
Ag-110m	0.4 +/- 2.5	3.9	pCi/L	U
Al-26	0.6 +/- 2.8	4.9	pCi/L	U
Am-241	5 +/- 15	25	pCi/L	U
Be-7	2 +/- 41	47	pCi/L	U
Bi-212	-4 +/- 50	33	pCi/L	U
Bi-214	-8 +/- 19	13	pCi/L	U
Ce-139	0.8 +/- 2.5	3.7	pCi/L	U
Ce-144	2 +/- 15	24	pCi/L	U
Co-56	-0.4 +/- 4.2	5.5	pCi/L	U
Co-57	0.6 +/- 2.0	3.1	pCi/L	U
Co-58	-0.4 +/- 4.0	5.1	pCi/L	U
Co-60	0.4 +/- 2.6	4.5	pCi/L	U
Cr-51	0 +/- 86	68	pCi/L	U
Cs-134	-0.6 +/- 2.2	3.7	pCi/L	U
Cs-137	0.1 +/- 2.3	4.0	pCi/L	U
Eu-152	2.9 +/- 7.0	12	pCi/L	U
Eu-154	-5 +/- 14	24	pCi/L	U
Eu-155	-1.7 +/- 8.0	13	pCi/L	U
Fe-59	3 +/- 11	12	pCi/L	U
I-131	0 +/- 490	58	pCi/L	U
K-40	87 +/- 78	79	pCi/L	B2
Mn-54	0.8 +/- 2.6	4.2	pCi/L	U
Na-22	-0.5 +/- 2.8	4.7	pCi/L	U
Nb-94	0.3 +/- 2.4	4.2	pCi/L	U
Nb-95	-0.4 +/- 4.5	5.5	pCi/L	U
Pa-234m	-100 +/- 1400	680	pCi/L	U
Pb-212	10.1 +/- 9.6	8.9	pCi/L	
Pb-214	-5 +/- 14	12	pCi/L	U
Ru-106	-2 +/- 24	38	pCi/L	U
Sb-124	0.3 +/- 3.8	4.5	pCi/L	U

Data Package ID: *GSW0006272-1*

Gamma Spectroscopy Results

Method PAI 713R5

Sample Results

Reported on: Monday, August 21, 2000 09:57:19

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: HRMB 6.29.00

Laboratory Name: Paragon Analytics, Inc.

PAI Work Order: 0006272

Field ID: PA-10.6
Lab ID: 0006272-5

Sample Matrix: Water
Date Prepared: 21-Jul-00
Prep SOP: PAI 739R3
Prep Batch: GS00358

Date Collected: 29-Jun-00
Date Analyzed: 30-Jul-00
Analytical SOP: PAI 713R5

Final Aliquot: 1.000
Aliquot Units: L
Report Basis: Total
Count Time (min.): 1000

Target Nuclide	Result +/- 2 s TPU	MDC	Reporting Units	Lab Qualifier
Sb-125	6.5 +/- 5.9	11	pCi/L	U
Sc-46	1.2 +/- 3.6	4.7	pCi/L	U
Sr-85	8.5 +/- 5.7	6.6	pCi/L	TI
Th-227	-10 +/- 120	26	pCi/L	U
Th-234	66 +/- 74	67	pCi/L	U
Tl-208	5.9 +/- 6.6	5.2	pCi/L	U
U-235	2 +/- 14	24	pCi/L	U
Zn-65	0.6 +/- 5.9	9.3	pCi/L	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

Y2 - Chemical Yield outside default limits.

* - Duplicate DER not within control limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

SQ - Spectral interference prevents accurate quantitation.

SI - Identification is tentative due to spectral interference.

TI - Nuclide identification is tentative.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: *GSW0006272-1*

Gamma Spectroscopy Results

Method PAI 713R5

Method Blank Results

Reported on: Monday, August 21, 2000 09:57:19

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: HRMB 6.29.00

Laboratory Name: Paragon Analytics, Inc.

PAI Work Order: 0006272

Field ID:

Lab ID: GS00358BLK1

Sample Matrix: Water

Date Prepared: 21-Jul-00

Prep SOP: PAI 739R3

Prep Batch: GS00358

Date Collected: 21-Jul-00

Date Analyzed: 26-Jul-00

Analytical SOP: PAI 713R5

Final Aliquot: 1.000

Aliquot Units: L

Report Basis: Total

Count Time (min.): 1000

Target Nuclide	Result +/- 2s TPU	MDC	Reporting Units	Lab Qualifier
Ac-228	0 +/- 10	10	pCi/L	U
Ag-110m	-0.2 +/- 1.3	2.2	pCi/L	U
Al-26	0 +/- 0	1.00	pCi/L	SQ
Am-241	2.5 +/- 6.0	10	pCi/L	U
Be-7	7 +/- 12	18	pCi/L	U
Bi-212	-10 +/- 280	20	pCi/L	U
Bi-214	1.0 +/- 6.9	8.4	pCi/L	U
Ce-139	-0.1 +/- 1.2	2.0	pCi/L	U
Ce-144	-0.5 +/- 8.6	14	pCi/L	U
Co-56	0.0 +/- 1.4	2.3	pCi/L	U
Co-57	0.4 +/- 1.1	1.9	pCi/L	U
Co-58	0.0 +/- 1.4	2.2	pCi/L	U
Co-60	-0.2 +/- 1.4	2.4	pCi/L	U
Cr-51	1 +/- 13	19	pCi/L	U
Cs-134	0.2 +/- 1.4	2.3	pCi/L	U
Cs-137	-0.3 +/- 1.4	2.5	pCi/L	U
Eu-152	1.9 +/- 4.6	7.8	pCi/L	U
Eu-154	2.1 +/- 7.4	13	pCi/L	U
Eu-155	1.1 +/- 4.9	8.3	pCi/L	U
Fe-59	-1.1 +/- 2.9	4.6	pCi/L	U
I-131	0.9 +/- 3.0	3.2	pCi/L	U
K-40	68 +/- 66	47	pCi/L	B
Mn-54	0.1 +/- 1.3	2.2	pCi/L	U
Na-22	-0.6 +/- 1.5	2.5	pCi/L	U
Nb-94	0.9 +/- 1.5	2.6	pCi/L	U
Nb-95	2.3 +/- 5.2	2.6	pCi/L	U
Pa-234m	0 +/- 18000	400	pCi/L	U
Pb-212	0.6 +/- 2.1	3.8	pCi/L	U
Pb-214	-3.2 +/- 8.1	8.8	pCi/L	U

Data Package ID: *GSW0006272-1*

Gamma Spectroscopy Results

Method PAI 713R5

Method Blank Results

Reported on: Monday, August 21, 2000 09:57:19

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: HRMB 6.29.00

Laboratory Name: Paragon Analytics, Inc.

PAI Work Order: 0006272

Field ID:
Lab ID: GS00358BLK1

Sample Matrix: Water
Date Prepared: 21-Jul-00
Prep SOP: PAI 739R3
Prep Batch: GS00358

Date Collected: 21-Jul-00
Date Analyzed: 26-Jul-00
Analytical SOP: PAI 713R5

Final Aliquot: 1.000
Aliquot Units: L
Report Basis: Total
Count Time (min.): 1000

Target Nuclide	Result +/- 2s TPU	MDC	Reporting Units	Lab Qualifier
Ru-106	-5 +/- 14	23	pCi/L	U
Sb-124	-0.2 +/- 1.5	2.4	pCi/L	U
Sb-125	-0.7 +/- 3.3	5.6	pCi/L	U
Sc-46	0.0 +/- 1.4	2.3	pCi/L	U
Sr-85	0.2 +/- 1.2	2.0	pCi/L	U
Th-227	1.1 +/- 8.1	14	pCi/L	U
Th-234	31 +/- 44	46	pCi/L	U
Tl-208	-0.6 +/- 4.3	3.3	pCi/L	U
U-235	5 +/- 10	13	pCi/L	U
Zn-65	5.8 +/- 3.1	4.9	pCi/L	TI

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y2 - Chemical Yield outside default limits.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

B - Analyte concentration greater than MDC.

SQ - Spectral interference prevents accurate quantitation.

SI - Identification is tentative due to spectral interference.

TI - Nuclide identification is tentative.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: *GSW0006272-1*

Gamma Spectroscopy Results

Method PAI 713R5

LCS Results

Reported on: Monday, August 21, 2000 09:57:19

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: HRMB 6.29.00

Laboratory Name: Paragon Analytics, Inc.

PAI Work Order: 0006272

Field ID:
Lab ID: GS00358LCS1

Sample Matrix: Water
Date Prepared: 21-Jul-00
Prep SOP: PAI 739R3
Prep Batch: GS00358

Date Collected: 21-Jul-00
Date Analyzed: 28-Jul-00
Analytical SOP: PAI 713R5

Final Aliquot: 1.000
Aliquot Units: L
Report Basis: Total
Count Time (min.): 30

Target Nuclide	LCS Results +/- 2s TPU	MDC	Spike Added	Reporting Units	LCS Recovery	Control Limits	Lab Qualifier
Am-241	62200 +/- 7900	990	62400	pCi/L	100%	85-115%	P
Cd-109	173000 +/- 22000	3700	162000	pCi/L	107%	85-115%	P
Co-57	1110 +/- 180	95	1190	pCi/L	93%	85-115%	P
Co-60	28100 +/- 3500	89	28400	pCi/L	99%	85-115%	P
Cs-137	26500 +/- 3300	130	24900	pCi/L	106%	85-115%	P

Comments:

Data Package ID: *GSW0006272-1*

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y2 - Chemical Yield outside default limits.

* - Duplicate DER not within control limits.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

Gamma Spectroscopy Results

Method PAI 713R5

Duplicate Sample Results (DER)

Reported on: Thursday, August 17, 2000 13:46:33

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: HRMB 6.26.00

Laboratory Name: Paragon Analytics, Inc.

PAI Work Order: 0006226

		Prep Date	Analysis Date	Prep Batch	Final Aliquot
Field ID:	DP SPRING				
Lab ID:	0006226-01	7/21/2000	7/27/2000	GS00358	1.000
DUP ID:	0006226-1-D1	7/21/2000	7/28/2000	GS00358	1.000

Sample Matrix: Water
Date Collected: 26-Jun-00
Analytical SOP: PAI 713R5
Prep SOP: PAI 739R3
Aliquot Units: L
Report Basis: Total

Analyte	Sample Result +/- 2s TPU	Duplicate Result +/- 2s TPU	Units	DER	Warning Limit	Lab Qualifiers
Ac-228	-13 +/- 31	-9 +/- 18	pCi/L	0.11	< 1.42	
Ag-110m	0.7 +/- 2.7	-0.3 +/- 2.6	pCi/L	0.27	< 1.42	
Al-26	-0.3 +/- 3.1	0 +/- 0	pCi/L	0.11	< 1.42	
Am-241	-12 +/- 13	-5 +/- 15	pCi/L	0.37	< 1.42	
Be-7	5 +/- 43	7 +/- 41	pCi/L	0.03	< 1.42	
Bi-212	3 +/- 21	-2 +/- 37	pCi/L	0.14	< 1.42	
Bi-214	-4 +/- 14	-12 +/- 13	pCi/L	0.42	< 1.42	
Ce-139	0.0 +/- 2.6	0.6 +/- 2.5	pCi/L	0.15	< 1.42	
Ce-144	-3 +/- 17	0 +/- 16	pCi/L	0.14	< 1.42	
Co-56	0.3 +/- 4.6	0.7 +/- 4.1	pCi/L	0.07	< 1.42	
Co-57	-0.5 +/- 2.3	0.0 +/- 2.0	pCi/L	0.18	< 1.42	
Co-58	0.3 +/- 4.5	0.1 +/- 3.9	pCi/L	0.03	< 1.42	
Co-60	-0.3 +/- 2.9	0.8 +/- 2.3	pCi/L	0.29	< 1.42	
Cr-51	7 +/- 83	1 +/- 90	pCi/L	0.04	< 1.42	
Cs-134	-0.4 +/- 2.4	0.2 +/- 2.5	pCi/L	0.18	< 1.42	
Cs-137	0.9 +/- 2.6	0.6 +/- 2.3	pCi/L	0.1	< 1.42	
Eu-152	-1.9 +/- 8.1	0.0 +/- 7.2	pCi/L	0.18	< 1.42	
Eu-154	0 +/- 15	1 +/- 14	pCi/L	0.04	< 1.42	
Eu-155	-1.1 +/- 8.5	-2.2 +/- 7.8	pCi/L	0.09	< 1.42	
Fe-59	3 +/- 13	1 +/- 12	pCi/L	0.09	< 1.42	
I-131	-30 +/- 510	0 +/- 600	pCi/L	0.04	< 1.42	
K-40	46 +/- 54	130 +/- 110	pCi/L	0.68	< 1.42	
Mn-54	-0.6 +/- 3.0	-0.6 +/- 2.7	pCi/L	0.01	< 1.42	
Na-22	-1.6 +/- 3.0	0.3 +/- 2.4	pCi/L	0.49	< 1.42	
Nb-94	0.2 +/- 2.5	-0.1 +/- 2.5	pCi/L	0.07	< 1.42	
Nb-95	-0.4 +/- 4.4	1.0 +/- 4.4	pCi/L	0.24	< 1.42	
Pa-234m	60 +/- 430	70 +/- 400	pCi/L	0.01	< 1.42	
Pb-212	5.2 +/- 6.7	-1.1 +/- 4.2	pCi/L	0.8	< 1.42	

Data Package ID: *GSW0006226-1*

Gamma Spectroscopy Results

Method PAI 713R5

Duplicate Sample Results (DER)

Reported on: Thursday, August 17, 2000 13:46:33

Client Name: NMED DOE Oversight Bureau

Client Project Name:

Client Project Number: HRMB 6.26.00

Laboratory Name: Paragon Analytics, Inc.

PAI Work Order: 0006226

	Prep Date	Analysis Date	Prep Batch	Final Aliquot
Field ID: DP SPRING				
Lab ID: 0006226-01	7/21/2000	7/27/2000	GS00358	1.000
DUP ID: 0006226-1-D1	7/21/2000	7/28/2000	GS00358	1.000

Sample Matrix: Water
Date Collected: 26-Jun-00
Analytical SOP: PAI 713R5
Prep SOP: PAI 739R3
Aliquot Units: L
Report Basis: Total

Analyte	Sample Result +/- 2s TPU	Duplicate Result +/- 2s TPU	Units	DER	Warning Limit	Lab Qualifiers
Pb-214	1.0 +/- 8.3	1.0 +/- 10.0	pCi/L	0	< 1.42	
Ru-106	4 +/- 26	0 +/- 22	pCi/L	0.14	< 1.42	
Sb-124	0.0 +/- 4.4	0.6 +/- 4.9	pCi/L	0.1	< 1.42	
Sb-125	0.6 +/- 6.4	-0.5 +/- 6.3	pCi/L	0.12	< 1.42	
Sc-46	-0.2 +/- 4.1	-2.0 +/- 4.1	pCi/L	0.32	< 1.42	
Sr-85	5.7 +/- 5.7	10.1 +/- 6.0	pCi/L	0.53	< 1.42	
Th-227	-1 +/- 14	-13 +/- 50	pCi/L	0.24	< 1.42	
Th-234	230 +/- 120	380 +/- 130	pCi/L	0.84	< 1.42	
Tl-208	5.2 +/- 3.8	1.2 +/- 4.0	pCi/L	0.73	< 1.42	
U-235	-50 +/- 530	-5 +/- 14	pCi/L	0.09	< 1.42	
Zn-65	0.0 +/- 6.6	1.9 +/- 5.8	pCi/L	0.22	< 1.42	

Comments:

Qualifiers/Flags:

W - DER is greater than Warning Limit of 1.42

H - DER is Higher han Control Limit of 2.13

SQ - Spectral interference prevents accurate quantitation.

SI - Identification is tentative due to spectral interference.

TI - Nuclide identification is tentative.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

Data Package ID: *GSW0006226-1*

Paragon Analytics, Inc.

Radiochemistry Case Narrative
Total Uranium in Water by KPA

NMED DOE Oversight Bureau

HRMB 6.29.00

PAI 00-06-272

1. This report consists of 2 water samples received by Paragon on 6/30/00.

2. These samples were prepared according to Paragon Analytics, Inc. procedure PAI SOP741R5.

3. The samples were analyzed for the presence of total uranium according to Paragon Analytics, Inc. procedure PAI SOP747 Rev. 3. The analysis were completed on date7/20/00.

4. For measurements with uranium concentrations below our reporting limit (0.2 ug/L for low range measurements and 25 ug/L for high range measurements), the R^2 or lifetime values might be outside the control limits. For these samples, considering all the parameters, the best result obtained is accepted. The final reporting limit reflects dilutions performed in the course of preparation and analysis.

5. Method required dilutions may have been performed to address matrix interferences. Where dilutions are required, the submitted sample result, uncertainty and reporting limit reflect the dilution performed. Results above the PAI reporting limit are reported without qualification. Results which fall between the PAI reporting limit and the method detection limit are flagged "J" and are qualified as estimated results due to additional uncertainty in the measurement at this concentration. Results less than the method detection limit are flagged "U" and are qualified as "below detection limit."

6. Lifetime values may exceed default limits set down in the PAI LQAP (200-350 μs). Especially affected are calibration standards and calibration verification samples. These samples consist of NIST traceable uranium and show no indications of interfering luminescence. Calibration samples show lifetimes ranging up to 400 μs. A composite measure of quality consisting of linearity (R^2) and lifetime is used to identify potentially interfering luminescence in samples. Any samples showing

luminescence above 400μs and coefficients of correlation in the log decay of the phosphorescence (R^2 values) below 0.99 are reanalyzed following dilution or quenching with methanol to address the effects of potential luminescence in these samples.

7. Matrix spike results are not evaluated for samples where the native uranium concentration is greater than four times the spiked uranium concentration.

8. No further problems were encountered with either the client samples or the associated quality control samples. All other quality control criteria were met.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Nell Carver — 7/24/00
Nell Carver — Date

Renee Gallegos — 7/25/00
Radiochemistry Final Data Review — Date

TOTAL URANIUM ANALYSIS RESULTS SUMMARY

By Laser-Induced Kinetic Phosphorimetry

Lab Name: Paragon Analytics, Inc. Date Collected: 06/29/2000

Client Name: NMED DOE Oversight Bureau Date Analyzed : 07/20/2000

Client Project ID: HRMB 6.29.00

Lab Sample ID Series: 00-06-272 Sample Matrix : WATER

Client Sample ID	Lab Sample ID	Total Uranium (ug/L)	Reporting Limit	Flag
PA-6.7	06-272-01	3.54 ± 0.48	1.00	
PA at TM	06-272-03	3.63 ± 0.49	1.00	
PA-6.7	06-272-D1	3.68 ± 0.50	1.00	

Reported Uncertainties are the Estimated Total Propagated Uncertainties (2σ).
See PAI SOP 743R3 for details of TPU determinations.

FLAGS = J - 'Estimated Value' - result between Method Detection Limit and Reporting Limit.
U - 'Not Detected' - result less than Method Detection Limit.

Remarks:

Sample 00-06-272-D1 is a duplicate of 00-06-272-01.

TOTAL URANIUM ANALYSIS RESULTS SUMMARY

By Laser-Induced Kinetic Phosphorimetry

Lab Name: Paragon Analytics, Inc. Date Collected: 06/15/2000

Client Name: NMED DOE Oversight Bure Date Analyzed : 07/20/2000

Client Project ID: HRMB 6.29.00

Lab Sample ID Series: 00-06-130 Sample Matrix : WATER

Client Sample ID	Lab Sample ID	Total Uranium (ug/L)	Reporting Limit	Flag
Blank	06-130-B1	BDL	0.20	U

Reported Uncertainties are the Estimated Total Propagated Uncertainties (2σ).
See PAI SOP 743R3 for details of TPU determinations.

FLAGS = J - 'Estimated Value' - result between Method Detection Limit and Reporting Limit.
U - 'Not Detected' - result less than Method Detection Limit.

BDL = Below Detection Limit; see method for DL determination.

Remarks:

Blank for Work Orders 00-06-272 and 00-06-130.

TOTAL URANIUM BLANK SPIKE RESULTS SUMMARY

By Laser-Induced Kinetic Phosphorimetry

Lab Name: Paragon Analytics, Inc. Date Collected: 06/15/2000

Client Name: NMED DOE Oversight Bure Date Analyzed : 07/20/2000

Client Project ID: HRMB 6.29.00

Lab Sample ID Series: 00-06-130 Sample Matrix : WATER

Lab Sample ID	Spike Conc. (ug/L)	Rep't Conc. (ug/L)
00-06-130-S1	2.00 ± 0.40	2.13 ± 0.29

Reported Uncertainties are the Estimated Total Propagated Uncertainties (2σ). See PAI SOP 743FC for details of TPU determinations.

PAI sets control limits for KPA Uranium measurements as follows:
Blank Spike Control Limits = Known (μ) ± 0.20 * μ.

Acceptance Range for spike samples is the known value ± the control limits stated above. The reported value, without the uncertainty, should be compared to that range.
Remarks:

Blank Spike for Work Orders 00-06-272 and 00-06-130.