New Horizons
CSMRI / 2135
PA WO 0405215

1. This report consists of the analytical results for three soil samples received by Paragon on 05/26/04.

2. These samples were prepared according to Paragon Analytics procedures PA SOP773R8.

3. The samples were analyzed for the presence of Polonium-210 according to Paragon Analytics procedure PA SOP714R8. The analyses were completed on 06/12/04.

4. The isotopic analysis results for these samples are reported on a dry weight basis in units of pCi/gram.

5. Due to the poor availability of a ‘NIST traceable’ Polonium-209 tracer solution, the concentration of a dilution of isotopically pure Po-209 received from Oak Ridge National Laboratory was determined by cross calibration against two distinct NIST traceable sources (Po-210 and Pb/Po-210). While the calibration is not formally ‘NIST traceable’, the Po-209 concentration was calibrated against and is thus referenced to NIST traceable standards.

6. Results of this analysis are decay-corrected to the sampling date, based on the 138.4 day half-life of Po-210. This decay correction makes no assumptions as to the equilibrium state of Po-210 with the Pb-210 parent nuclide, which has a half-life of 22.3 years.

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

Skye Dobberstein
Radiochemistry Instrumentation

John Petrow
Radiochemistry Final Data Review

6/25/04
Date

6/25/04
Date
Polonium-210 by Alpha Spectroscopy
PAI 714 Rev 8
Method Blank Results

Lab Name: Paragon Analytics
Work Order Number: 0405215
Client Name: New Horizons
Client Project ID: CSMRI 2135

Lab ID: PL040609-1MB
Sample Matrix: SOIL
Prep SOP: PAI 711 Rev 5
Date Collected: 08-Jun-04
Date Prepared: 09-Jun-04
Date Analyzed: 12-Jun-04
Prep Batch: PL040609-1
QCBatchID: PL040609-1-1
Run ID: PL040609-1A
Count Time: 300 minutos
Final Aliquot: 0.500 g
Result Units: pCi/g
File Name: 040601B

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>13981-52-7</td>
<td>Po-210</td>
<td>0.008 +/- 0.045</td>
<td>0.065</td>
<td>U</td>
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</table>

Chemical Yield Summary

<table>
<thead>
<tr>
<th>Carrier/Tracer</th>
<th>Amount Added</th>
<th>Result</th>
<th>Units</th>
<th>Yield</th>
<th>Control Limits</th>
<th>Flag</th>
</tr>
</thead>
<tbody>
<tr>
<td>Po-209</td>
<td>8.403</td>
<td>8.9</td>
<td>pCi/g</td>
<td>81.8</td>
<td>20 - 110 %</td>
<td></td>
</tr>
</tbody>
</table>

Comments:

Classifiers/Flags:
- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.

Data Package ID: PL0405215-1

Paragon Analytics
LIMS Version: 5.28A
Polonium-210 by Alpha Spectroscopy
PAI 714 Rev 8
Laboratory Control Sample(s)

Lab Name: Paragon Analytics
Work Order Number: 0405215
Client Name: New Horizons
ClientProject ID: CSMRI 2135

Lab ID: PL040509-1LCS
Sample Matrix: SOIL
Prep SOP: PAI 711 Rev 5
Date Collected: 09-Jun-04
Prep Batch: PL040609-1
QCBatchID: PL040609-1-1
Date Prepared: 09-Jun-04
Run ID: PL040609-1A
Date Analyzed: 12-Jun-04
Count Time: 300 minutes
Final Aliquot: 0.500 g
Result Units: pCi/g
File Name: OR40601L

CASNO Target Nuclide Results +/- 2s TPU MDC Spike Added % Rec Control Limits Lab Qualifier
13981-52-7 Po-210 15.3 +/- 2.5 0.1 14.4 106 83 - 117 P

Chemical Yield Summary

<table>
<thead>
<tr>
<th>Carrier/Tracer</th>
<th>Amount Added</th>
<th>Result</th>
<th>Units</th>
<th>Yield</th>
<th>Control Limits</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Po-209</td>
<td>8.403</td>
<td>7.0</td>
<td>pCi/g</td>
<td>83.8</td>
<td>20 - 110 %</td>
<td></td>
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Comments:

Qualifiers/Flags:
U - Result is less than the sample specific MDC.
LT - Result is less than Requested MDC, greater than sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS Recovery within control limits.
M - The requested MDC was not met.
M0 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:
TPU - Total Propagated Uncertainty (see PAI SOP 745)
MDC - Minimum Detectable Concentration (see PAI SOP 706)

Data Package ID: PL0405215-1

Date Printed: Thursday, June 24, 2004
Paragon Analytics
LIMS Version: 5.036A
Polonium-210 by Alpha Spectroscopy

PAI 714 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405215
Client Name: New Horizons
Client Project ID: CSMRI 2135

<table>
<thead>
<tr>
<th>Field ID:</th>
<th>SDA3</th>
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<tbody>
<tr>
<td>Lab ID:</td>
<td>0405215-1</td>
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Sample Matrix: SOIL
Prep SOP: PAI 711 Rev 5
Date Collected: 13-May-04
Date Prepared: 09-Jun-04
Date Analyzed: 12-Jun-04

Prep Batch: PL040609-1
QC Batch ID: PL040609-1-1
Run ID: PL040609-1A
Count Time: 300 minutes
Report Basis: Dry Weight
Final Aliquot: 0.507 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: OS1251

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<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
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<th>Lab Qualifier</th>
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</thead>
<tbody>
<tr>
<td>13981-52-7</td>
<td>Po-210</td>
<td>2.77 +/- 0.58</td>
<td>0.09</td>
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Chemical Yield Summary

<table>
<thead>
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<th>Carrier/Tracer</th>
<th>Amount Added</th>
<th>Result</th>
<th>Units</th>
<th>Yield</th>
<th>Control Limits</th>
<th>Flag</th>
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</thead>
<tbody>
<tr>
<td>Po-209</td>
<td>8.291</td>
<td>6.5</td>
<td>pCi/g</td>
<td>78.9</td>
<td>20 - 110 %</td>
<td></td>
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Comments:

Qualifiers/Flags:
U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

Abbreviations:
TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: PL0405215-1

Date Printed: Thursday, June 24, 2004
Paragon Analytics
LIMS Version: 5.036A
Page 1 of 3
Polonium-210 by Alpha Spectroscopy

PAI 714 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405215
Client Name: New Horizons
ClientProject ID: CSMRI 2135

Sample Matrix: SOIL
Prep SOP: PAI 711 Rev 5
Date Collected: 26-May-04
Date Prepared: 09-Jun-04
Date Analyzed: 12-Jun-04

Prep Batch: PL040509-1
QCBatchID: PL040509-1-1
Run ID: PL040509-1A
Count Time: 300 minutes
Report Basis: Dry Weight
Final Aliquot: 0.506 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 051252

<table>
<thead>
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<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
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</thead>
<tbody>
<tr>
<td>13881-52-7</td>
<td>Po-210</td>
<td>1.79 +/- 0.41</td>
<td>0.07</td>
<td></td>
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Chemical Yield Summary

<table>
<thead>
<tr>
<th>Carrier/Tracer</th>
<th>Amount Added</th>
<th>Result</th>
<th>Units</th>
<th>Yield</th>
<th>Control Limits</th>
<th>Flag</th>
</tr>
</thead>
<tbody>
<tr>
<td>Po-209</td>
<td>8.307</td>
<td>6.8</td>
<td>pCi/g</td>
<td>82.0</td>
<td>20 - 110 %</td>
<td></td>
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</table>

Comments:

Qualifiers/Flags:
U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
MB - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

Abbreviations:
TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 708)
BDL - Below Detection Limit

Data Package ID: PL0405215-1

Date Printed: Thursday, June 24, 2004
Paragon Analytics
LIMS Version: 5.035A
Polonium-210 by Alpha Spectroscopy

PAI 714 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405215
Client Name: New Horizons
Client Project ID: CSMRI 2135

| Field ID: C2132M | Sample Matrix: SOIL |
| Lab ID: 0405215-3 | Prep SOP: PAI 711 Rev 5 |
| | Prep Batch: PL040609-1 |
| | QCBatchID: PL040609-1-1 |
| | Run ID: PL040609-1A |
| | Count Time: 300 minutes |
| | Report Basis: Dry Weight |
| | Final Aliquot: 0.500 g |
| | Prep Basis: Dry Weight |
| | Moisture(%): NA |
| | Result Units: pCi/g |
| | File Name: 052153 |

<table>
<thead>
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<th>CASNO</th>
<th>Target Nuclide</th>
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<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>13881-52-7</td>
<td>Po-210</td>
<td>3.55 +/- 0.71</td>
<td>0.04</td>
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Chemical Yield Summary

<table>
<thead>
<tr>
<th>Carrier/Tracer</th>
<th>Amount Added</th>
<th>Result</th>
<th>Units</th>
<th>Yield</th>
<th>Control Limits</th>
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<tbody>
<tr>
<td>Po-209</td>
<td>8.395</td>
<td>6.6</td>
<td>pCi/g</td>
<td>79.2</td>
<td>20 - 110 %</td>
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Comments:

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Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
MB - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

Abbreviations:
TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: PL0405215-1