13.0 SAMPLE PREPARATION, ANALYSIS AND SECURITY

13.1 *Sample Preparation*

Geovic maintains a sample-preparation facility at the Kongo Camp, where samples are prepared for assay. PAH reviewed the procedures in detail, and photographed each stage, as shown in Figures 13-1 and 13-2.

Upon arrival from the field in polyethylene woven bags, the samples are stored in a sheltered locality until processed (Figure 13-1, upper left). As each bag was opened, the sample was placed in a steel tray for drying, and an aluminum tag bearing the information on the sample bag placed on the tray. After drying, the sample was quartered and placed in a clearly labeled plastic bag, with the location and interval. Another aluminum tag was prepared which accompanied the sample (Figure 13-1, lower right), all the way to arrival and re-coding of the samples in the U.S. The aluminum tag placed in the steel tray before oven drying remains with the back-up sample on the shelves in the warehouse.

Drying of samples was accomplished in a wood-fired oven (Figure 13-1, lower left). The temperature was not recorded, but appears to be in the vicinity of 100 degrees C, plus or minus 20 degrees. Samples were examined manually from time to time to determine the degree of dryness, and normally after six or seven hours were judged to be sufficiently dry for further processing.

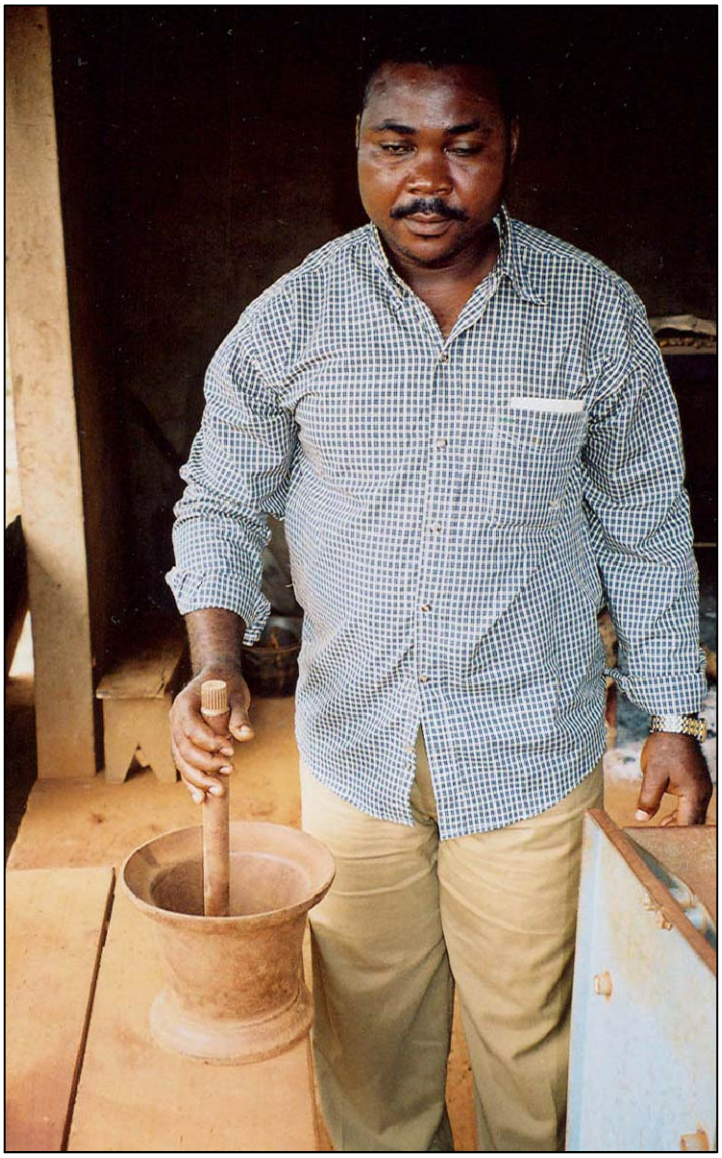
Upon removal from the oven and cooling, each sample was inspected visually for oversize material (coarser than approximately 2 centimeters). Oversize material was manually crushed in a mortar and pestle (Figure 13-1, upper right) and returned to the sample tray. At this point, the dried sample was reviewed again by a geologist to ensure that the on-site logging did not miss important features due to excessive mud in the case of RC drilling samples, poor light, etc.

The sample was then split in a Jones-type riffle splitter (Figure 13-2, upper left) with openings measuring 10 mm. Normally a 200-gram dried sample was weighed (Figure 13-2, upper right) and bagged (Figure 13-2, lower left) for shipment to the assay lab. All remaining reject was bagged and stored at Kongo Camp (Figure 13-2, lower right).

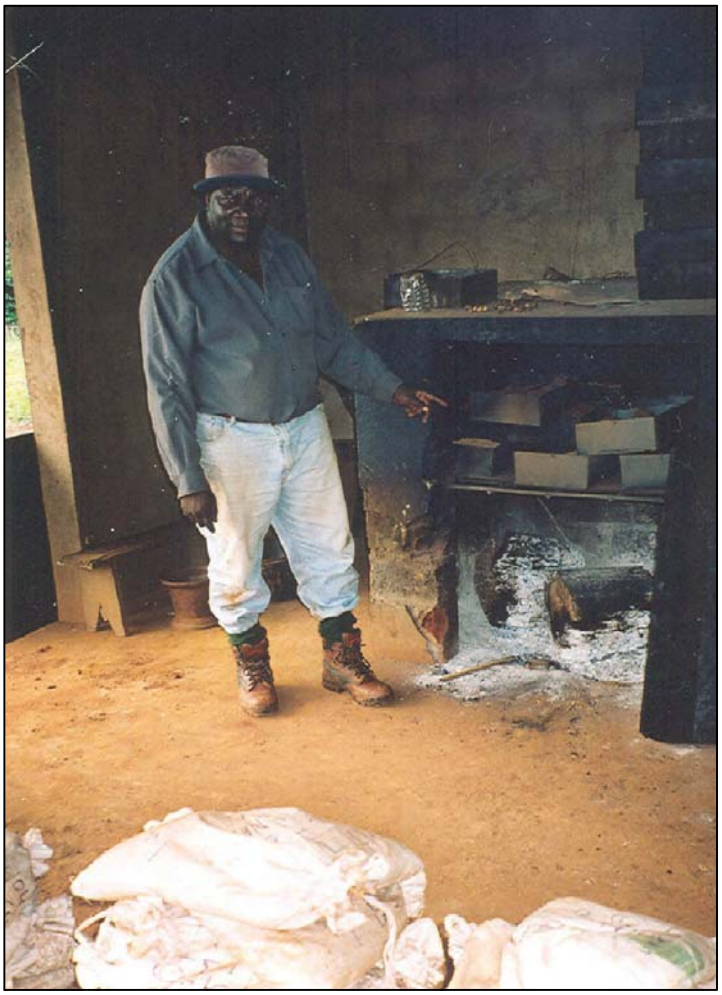
The shipment of samples follows JORC (Australian) procedures regarding chain of custody. Samples were shipped by vehicle to Geovic's office in Yaounde, the capital of Cameroon, whence they were delivered to a common carrier for air-freighting to North America.

From 2002 until early 2004, Geovic contracted Mintec of Tucson, Arizona, to oversee the Quality Assurance/Quality Control for Cameroon samples. Mintec provided new 4-digit sample numbers to each sample, before sending the samples to Actlabs in Tucson. Actlabs then pulverized the samples to minus-150 mesh and returned the pulps to Mintec. Mintec then inserted duplicates, standards, and blanks into the sample stream prior to returning the pulps to Actlabs for analysis.

Sample Storage



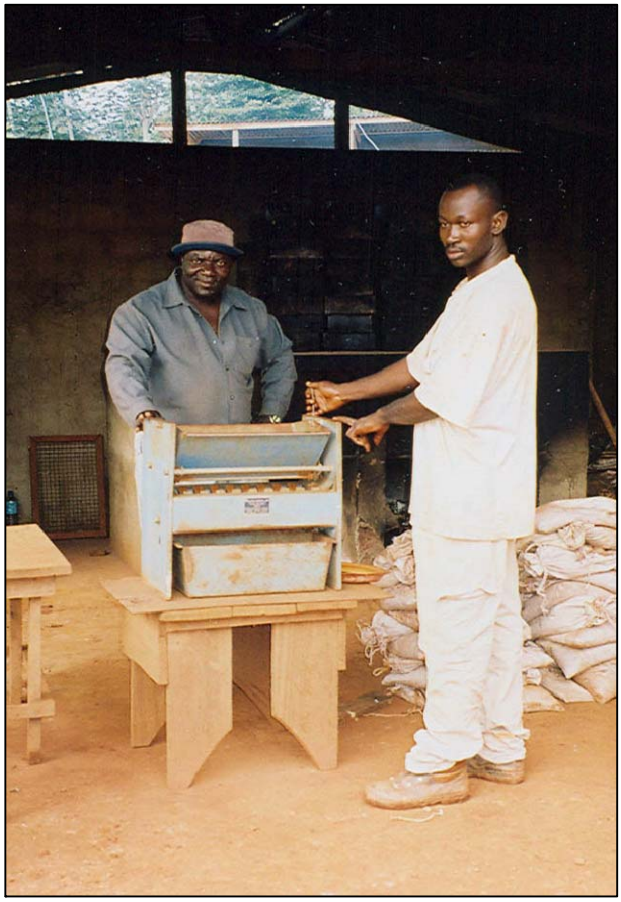
Crushing of Oversize



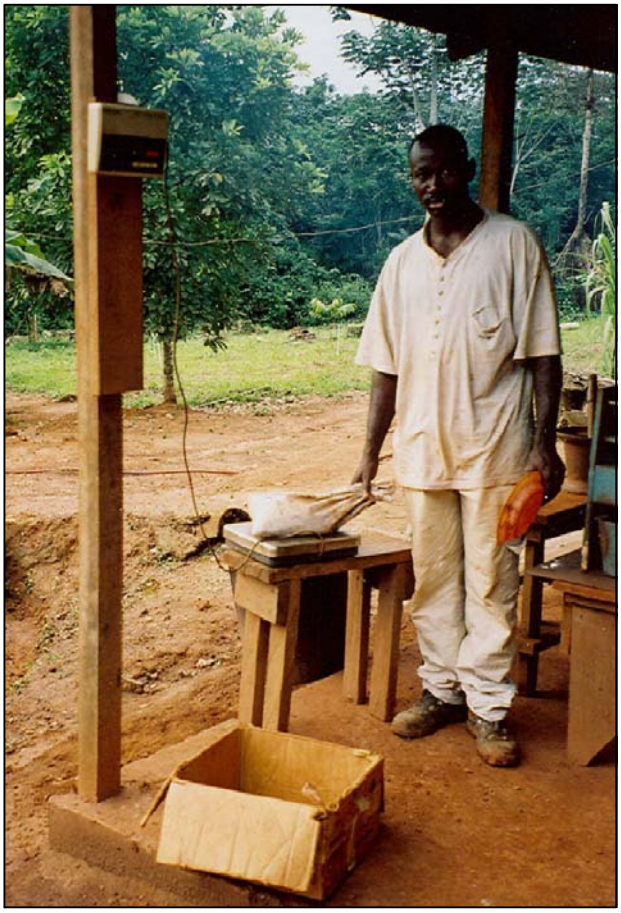
Oven Photo

Tag Identification

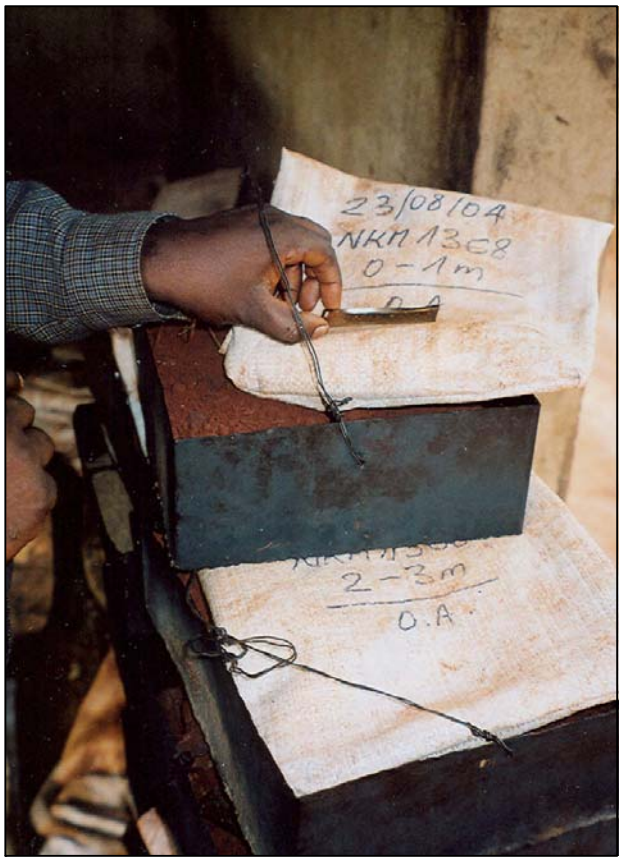
Prepared by **pincock, allen & holt** 165 S. Union Boulevard, Suite 950 Lakewood, Colorado 80228 Phone (303) 986-6950 Project No. 80530	Drawing Provided by/Prepared for ***GEOVIC MINING Corp.*** Project Name Nkamouna Cobalt Project 43-101	FIGURE 13-1 SAMPLE-PREPARATION FACILITY at the KONGO CAMP	Date of Issue Jan/2008 Drawing Name Fig.13-1.dwg



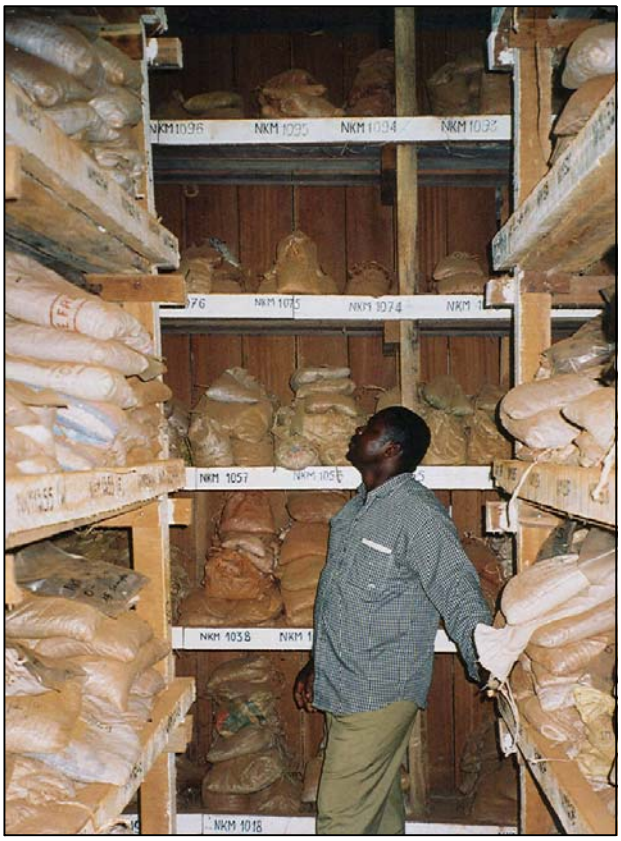
Splitter



Weighing



Bagging



Reject Storage

Prepared by pincock, allen & holt 165 S. Union Boulevard, Suite 950 Lakewood, Colorado 80228 Phone (303) 986-6950 Project No. 80530	Drawing Provided by/Prepared for *GEOVIC MINING Corp.* Project Name Nkamouna Cobalt Project 43-101	FIGURE 13-2 SAMPLE-PREPARATION FACILITY at the KONGO CAMP	Date of Issue Jan/2008 Drawing Name Fig.13-2.dwg

It was apparent to PAH that Geovic personnel and Mintec, Inc. paid close attention to sampling and sample-processing techniques, and varied the techniques from time to time, based on careful analysis of results, including comparisons between different methods. PAH believes that the collection and handling of samples meet or exceed industry standards for laterite projects, and that any limitations on precision and accuracy of samples are those limitations inherent in the laterite deposits themselves and in assaying technology.

13.2 *Assaying*

Between January 2003 and January 2004, a total of 3,359 sample results were shipped to Actlabs, Tucson, Arizona, for processing at an assaying cost of US$11.90 per sample. Of these, 3,095 were original samples from Nkamouna, plus 39 second splits and 162 standards included with Nkamouna samples. (The remaining 64 samples during this period were from the Mada deposit, north of Nkamouna.) Altogether, more than 14,000 Nkamouna samples were assayed for cobalt and nickel during 1995-2004. Many of these samples were also assayed for manganese and other elements and compounds. Sampling from the 2006 test pits and deepening of existing pits followed the same protocols as in 2004.

13.2.1 Sample Preparation for Assaying

The samples received at Bondar-Clegg and Actlabs in Tucson were dried for 24 hours at 150°C before anaylses. According to the mineralogical literature on asbolane, there should be no loss of chemically combined water or hydroxyl ions below 150°C. Thus the subsequent assays reflect intact dry asbolane, which is lacking only any loosely-bound water that is not included in the calculated dry tonnes of mineral resource.

13.2.2 Laboratory Qualifications

Actlabs' Tucson facility is accredited to ISO/IEC-17025 and CAN-P-1579 (Canadian) standards, and is thus as fully accredited as a commercial mining assay laboratory.

13.2.3 Laboratory Methods

Following the drying at Actlabs facility, as discussed above, pulps of Geovic samples were digested in a 3-acid solution and 4-acid solutions and analyzed primarily by the ICP-OES (Inductively Coupled Plasma Optical Emission Spectrometry) method for Co, Ni and Mn. The 3-acid digestion is normally sufficient to dissolve all minerals typically present in the Nkamouna samples.

Various other appropriate methods were used for occasional analyses of 34 other elements (Pb, Zn, Cu, Cr, V, Mg, Al, Sc, Zr, MgO, SiO_2, etc.) for bulk samples and other specialty samples.

13.3 *Inter-Laboratory Comparisons*

Various inter-laboratory checks have been undertaken by Geovic throughout the life of the Nkamouna project.

In 1999, K D Engineering Co Inc. of Tucson, Arizona, visited Nkamouna and undertook to re-sample eight exploration pits. Samples were taken separately from one-meter intervals in channels in the east and west wall of each pit. Splits of each crushed sample were sent for pulverizing and assay to three different laboratories: International Plasma Laboratories (Vancouver); Bondar Clegg Intertek Testing Services (Vancouver); and Genalysis Laboratories (Perth, Australia). The laboratories did not include Actlabs, which subsequently assayed the greater bulk of the Nkamouna samples. Their report (K D Engineering Co. Inc., 2000), indicates that Genalysis and Bondar Clegg agreed closely on Co assays (difference of less than 2 percent relative, and a Coefficient of Correlation, R^2, of 0.987), whereas the International Plasma results averaged more than 10 percent low, with R^2, of less than 0.95 when compared to either of the other two labs. No further samples were analyzed by International Plasma.

13.4 *Quality Control*

The samples assayed by Actlabs were submitted to both Actlabs' and Geovic's independent QA/QC checks. The use of second splits and sample standards are universally recognized methods to provide confidence in the assaying reliability.

13.4.1 Actlabs Quality Control

The Actlabs laboratory runs assay batches of 24 prepared pulp samples, comprising 20 samples plus repeats on the 1st and 20th samples of each batch, in addition to two in-house standards. One sample per client's submitted batch of 20 was reweighed along with both an in-house and a certified reference standard of known Co-Ni-Mn content. Actlabs internal checks allow for a maximum acceptable variance of 2 percent for duplicates and standards. Given its ISO and CAN-P-1579 certifications, Actlabs is required to have a suitable program in place for periodic round-robin inter-laboratory comparisons.

13.4.2 Geovic Sample Splits

Geovic undertook a comprehensive program of comparing second sample splits from Nkamouna. The pairs of samples extracted from the same sample intervals show a high degree of correlation for Co, Ni, and Mn, providing confidence in the ability of Actlabs to generate reproducible assay results from similar sample material.

The 39 second splits for which assay results have been received, distributed throughout 35 sample submission shipments, were extracted from the same sample rejects stored at the Project Camp (Kongo) as the original samples. Once an original 200 gram (g) sample was drawn, the reject was remixed (further ensuring complete homogenization) and a second sample was drawn and had a "D" added to the

sample number. After sample preparation by Actlabs, all sample pulps were assigned an individual number by Mintec prior to the actual assaying at Actlabs.

Figure 13-3 shows a comparison of splits for cobalt. Similar plots prepared by PAH for Ni and for Mn indicate that similar correlations occur for those metals.

13.4.3 Geovic Standards

At the request of Geovic in 2003, Mintec fabricated five sample control standards (M5, M6, M7, M8 and M9) of known Co, Ni and Mn value from on-hand Nkamouna material, thereby ensuring that there was no visual difference between the standards and regular samples. The results of 165 analyses of these five standards, distributed throughout 35 sample submission shipments, were received by January 2004.

Perusal of the results strongly suggested that some of the standards had been mislabeled or switched in 32 of the 165 submitted. Mintec personnel therefore examined the anomalous assays of standards, and were able to reassign most of them to the proper standard, according to the Co, Ni, and Mn assays received. Three submitted standard samples did not match any of the five original standards, and it is likely that these three samples were switched with ordinary production samples at the laboratory (three of 168 is about 2 percent, probably not an atypical error rate for switching of samples in production runs). The "filtered" results of assays on the standards are shown in Table 13-1.

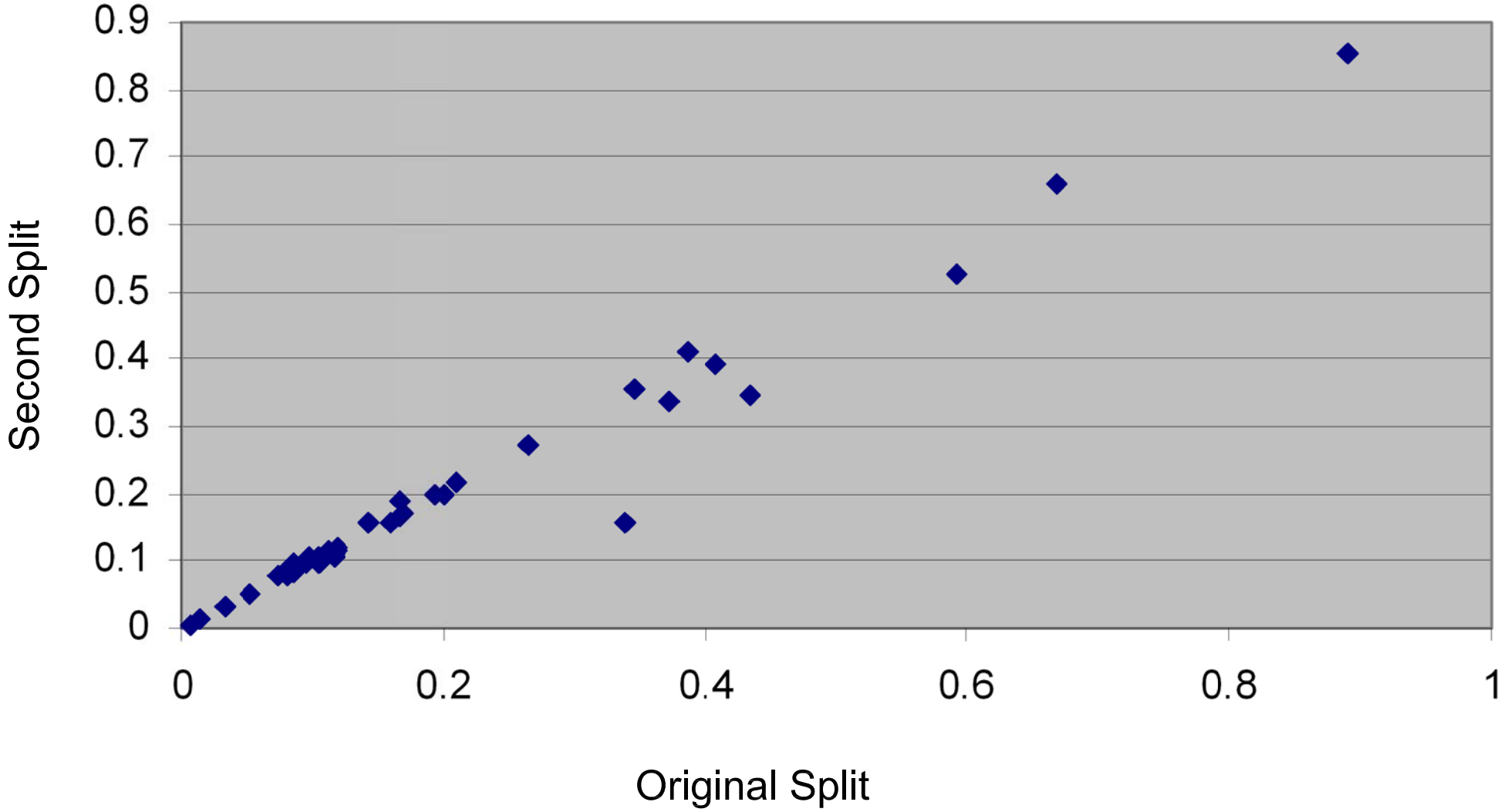
TABLE 13-1
Geovic, Ltd.
Nkamouna Project, Cameroon
Nkamouna Sample Standards, "Filtered" Results

Standard	N*	Average Co %	std dev Co %	Average Ni %	std dev Ni %	Average Mn %	std dev Mn %
M5	33	0.143	0.0028	0.32	0.0058	0.76	0.013[a]
M6	30	0.275	0.0034	0.62	0.0093	1.52	0.025
M7[b]	31	0.338	0.0038	0.94	0.0129	2.00	0.030
M8	44	0.495	0.0057	0.61	0.0078	2.20	0.031
M9	25	0.287	0.0040	0.58	0.0094	1.70	0.024

* N = number of assays of this standard by Actlabs
[a] excludes one anomalous assay of 2.41% Mn
[b] excludes one anomalous result which is one of the three unresolved standard samples

Table 13-1 indicates that the precision of the Actlabs assays is very high; i.e., that the Actlab results are highly repeatable. However, the Mintec standards do not appear to have been independently assayed outside Actlabs. Therefore the Mintec standards program did not elucidate the accuracy (i.e., closeness to absolute truth) of the Actlab assays.

Nevertheless, given that Actlabs are an ISO-certified facility, PAH is prepared to accept the general veracity of the assays on Nkamouna samples.



Prepared by pincock, allen & holt 165 S. Union Boulevard, Suite 950 Lakewood, Colorado 80228 Phone (303) 986-6950 Project No. 80530	Drawing Provided by/Prepared for *GEOVIC MINING Corp.* Project Name Nkamouna Cobalt Project 43-101	FIGURE 13-3 COBALT ASSAYS of ORIGINAL and SECOND SPLITS NKAMOUNA	Date of Issue Jan/2008 Drawing Name Fig.13-3.dwg

13.5 *Excluded Samples and Reasons*

The exclusion of samples from specific locations or types is discussed in Section 17.0, Resources.