

40-7102



SHIELDALLOY METALLURGICAL CORPORATION

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CERTIFIED MAIL: P 284 355 068
RETURN RECEIPT REQUESTED

January 28, 1994

Mr. Gary Comfort
Licensing Section 2
Licensing Branch
Division of Fuel Cycle Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

RE: Request for Additional Information for Environmental Assessment
(TAC No. L21474)

Dear Mr. Comfort:

Please find the following responses to the comments and questions as listed in your January 12 1994 letter received by Shieldalloy Metallurgical Corporation on January 14, 1994.

1. The STAR data previously transmitted to us in your last response did not include meteorological data from 12:00 midnight to 10:00 am. Please submit the missing data on a 3 1/2" diskette.

Per SMC's letter dated June 29, 1993 to Mr. Chuck Ameigh (USNRC) the requested data was ordered. The National Climatic Data Center (Axel Graumann) reviewed the order that was supplied for Normal Star data. If Mr. John Abbot (Pacific Northwest Laboratories) requires different tabulations of data, he should contact NCDC directly to determine what is available and useable.

2. Provide the status of your formal Radiation Protection Program -- the status of IOPs, program description, and in particular, the environmental monitoring program.

A list of 19 proposed SOP's is attached (Attachment 1). All 19 have been drafted and are currently under review for consistency with SMC's license application and NRC requirements.

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3. Submit data for any analytical studies completed on the slag and lime piles; in particular, provide the following information:
- What are the pH values of these piles?
 - In what chemical forms(s) are the uranium and thorium isotopes found in the piles? What else is found in the analytical composition of the piles?

Various analytical results of baghouse dust and slag are included in Attachment 2. No pH values of baghouse dust nor slag have been reported. Uranium and Thorium oxides are listed as U_3O_8 and ThO_2 . Other metals and oxides are reported from baghouse dust, slag and leachate samples. The ferrocolumbium slag leachability study results were submitted to Mr. Yawar Faraz (USNRC) on December 26, 1991.

4. Indicate how many "Area-TLDs" are found in and around the facility and show their locations.

There are approximately 44 "Area-TLD" locations in and around the facility. This TLD information was provided to Mr. Ikenberry (PNL) on 8/24/93 via facsimile. This information is provided (Attachment 3) for expedience.

5. Include the names and addresses of any world competitors which produce ferro-Columbian metal alloys.

SMC is the only U.S. producer of ferrocolumbium. See Attachment 4 for additional information. However, SMC believes that this is not relevant to completion of the Environmental Assessment.

6. Is ferro-Columbian defense related or unique?

See Attachment 4.

7. Include any safety and/or environmental studies conducted on the transportation of the pyrochlore to the site.

Please refer to Responses 3.1 and 3.2.1 of the June 29, 1993 letter from Craig R. Rieman (SMC) to Mr. Chuck Ameigh (USNRC). No additional pyrochlore transportation studies have been completed nor required.

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8. Provide information on any biological studies performed on the riparian/wetland area adjacent to the site and any ecological risk studies performed for the site and surrounding area.

Please note the following references:

- The Baseline Radiological Risk Assessment for the Hudson's Branch Watershed, IT Corp., Nov. 1992.
- Shieldalloy Metallurgical Corporation Conceptual Decommissioning Plan for the Newfield, New Jersey Facility, IT Corp., April 1993.
- Draft Final Report, Risk Assessment, Shieldalloy Metallurgical Corporation, Newfield, New Jersey, TRC Environmental Consultants, Inc., Feb. 1992.

Let me know if you need copies of any of the above.

9. Provide information on any new programs implemented to meet new requirements under 10 CFR Part 20. Do you expect any negative impacts from the implementation of the new 10 CFR Part 20 requirements?

Refer to Item 2 and SOPs.

10. What non-radiological byproduct streams (if any) are produced from the production of ferro-Columbian?

Baghouse dust and slag are the only by-product streams from ferrocolumbium production. Bags & drums are consumed in the operation; Spent electrodes are sold for recycle value.

11. What is the analytical composition of the pyrochlore (both radioactive and non-radioactive constituents)?

Pyrochlore analyses are provided in Attachment 5.

12. Page 15, paragraph 3.3, of the Environmental Report (SMC, 1992) states that "...kerosene, cutting oil...liquid argon, and acetylene" are used as part of the "routine operations." Are these or any other chemicals, solvents, additives, degreasers, etc., used exclusively for any aspect of the ferro-columbian process (including pre- and post-processing activities)? If so, please list them and their functions.

Mr. Gary Comfort
U.S. NRC
January 28, 1994
Page 4

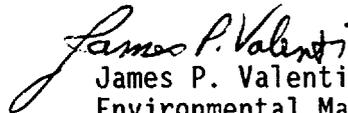
No other chemicals, solvents, degreasers, etc., are used exclusively for any aspect of ferrocolumbium processing.

13. Submit a copy of the latest Remedial Investigation Technical Report prepared by your consultant, TRC Environmental Consultants, Inc., and include all appendices.

A copy of the Remedial Investigation Report with figures and tables was provided to the NRC and PNL at the site visit for the Environmental Assessment. TRC, Inc. has been requested to send a complete set directly to the NRC and will be provided as soon as possible.

Please call me at 609-692-4200 if you have any questions regarding the above responses or attachments. I believe this information will allow for completion of the Environmental Assessment for renewal of this SMC license.

Sincerely,


James P. Valenti
Environmental Manager

JPV:lms

Attachments

CC: Michael A. Finn
Nils Schooley
Robert L. Swenson
Brian W. Martin
C. Scott Eves
David R. Smith
Carol D. Berger, IT Corp.
Robert Smith, TRC-ECI

ATTACHMENTS

- 1) Standard Operating Procedures for SMC's Radiation Protection Program
- 2) Baghouse Dust and Slag Analyses
- 3) TLD Locations
- 4) Historical Information
- 5) Pyrochlore Analyses

ATTACHMENT 1

Standard Operating Procedures for SMC'S Radiation Protection Program

1. Radiation Protection Program
2. Training in Radiation Protection
3. Radiation Protection Organization and Administration
4. ALARA Program
5. Control of Radiological Work
6. Quality Assurance in Radiological Protection
7. Control of Standard Operating Procedures for Radiation Protection
8. Receipt, Handling, and Identification of Radioactive Materials
9. Radiological Areas and Posting
10. Emergency Response and Notifications
11. Radiation Protection Records
12. Instrumentation and Surveillance
13. Contamination Control
14. Stop Work Authority
15. Control of Radioactive Waste
16. Radiation Exposure Control
17. Training and Qualifications of Radiation Protection Personnel
18. Packaging and Transportation of Radioactive Materials
19. Environmental Surveillance

ATTACHMENT 2

Baghouse Dust and Slag Analyses

FeCb SLAG RADIOLOGICAL ANALYSIS

	<u>% U ²³⁵</u>	<u>% Th ²³²</u>	<u>% (U+Th)</u>
Slag 1	0.56	0.08	0.64
Slag 2	0.20	0.10	0.30
Slag 3	0.35	0.05	0.40
Pyrochlore 1	0.34	0.03	0.37
Pyrochlore 2	0.59	0.04	0.63

FeCb SLAG ANALYSIS

	<u>1986 to 1991 Average (%)</u>	<u>1991 Average (%)</u>
Al ₂ O ₃	43 ± 13	42
CaO	32 ± 8	38
MgO	19 ± 5	18
Cb ₂ O ₅	2.5 ± 2	1
Fe ₂ O ₃	2.1 ± 2	0.5
SiO ₂	0.7 ± 0.6	0.5
Others	Trace	Trace
Approximate Melting Point	1750°C	

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12/27/1991



FeCb BAGHOUSE DUST

	November 1991 Analysis (%)		June 1989 <u>Outside Analysis</u>
	<u>Outside Analysis</u>	<u>SMC Analysis</u>	
MgO	15.3	18.3	15.27
CaO	6.7	7.1	5.11
Cb ₂ O ₅	1.5	3.3	
Fe ₂ O ₃	0.5	0.6	0.64
MnO	0.4		
Al ₂ O ₃		1.8	1.15
SiO ₂		0.3	0.43
TiO ₂			0.35
V ₂ O ₅			0.04
Sr	0.13		
Ba	0.12		
Pb	0.36		
Zn	0.35		0.08
Cl	1.61		
K	2.59		
Na	22.0		23.32
C			6.88
Moisture (135°C)			12.52%
LOI (1000°C), including moisture			25.81%

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12/27/1991

inform CRR accordingly.

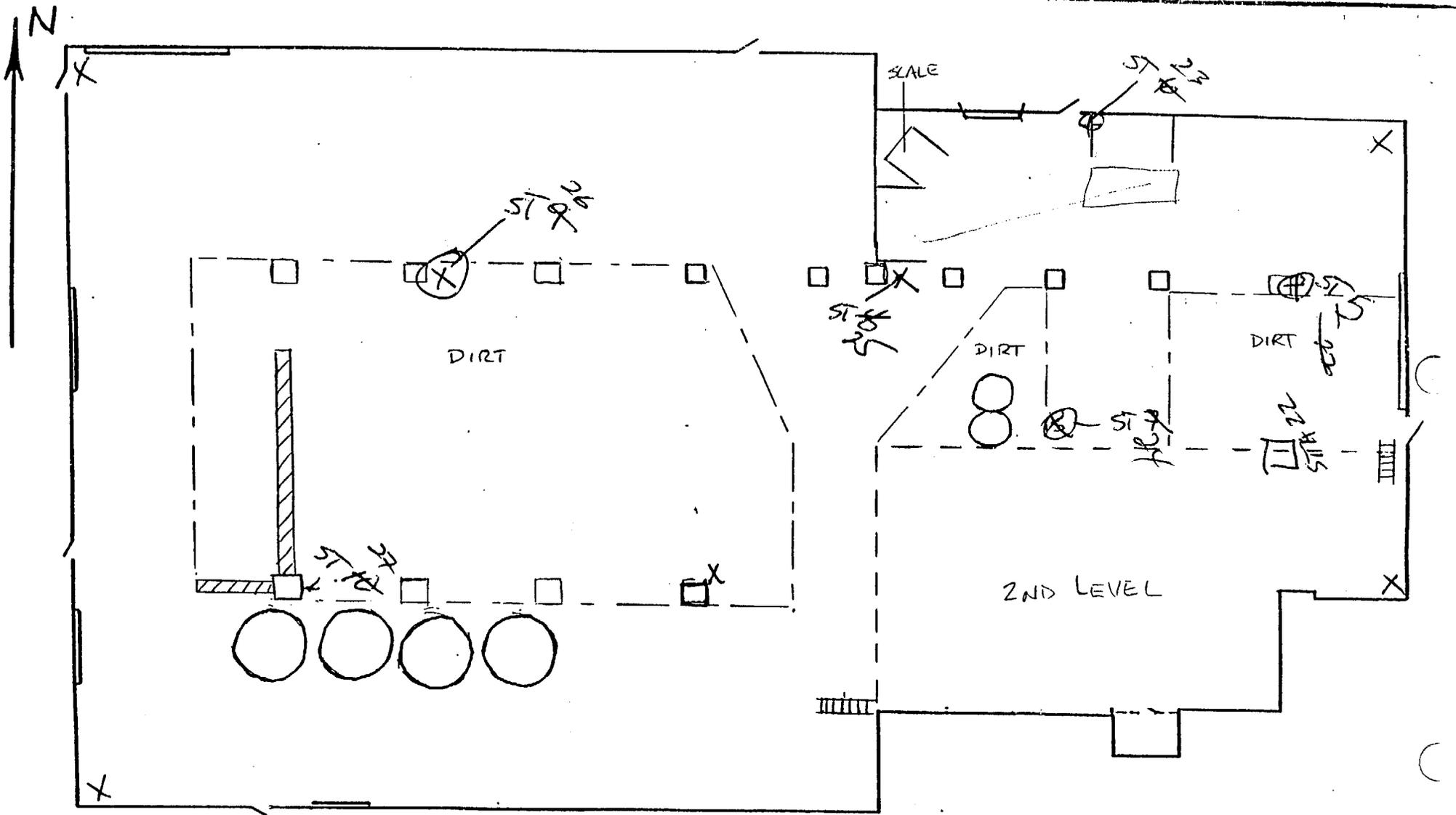
3. CRR reported the results of radiological analysis of baghouse dust for samples taken at various dust pile locations. The results are as follows:

BAGHOUSE DUST RADIOLOGICAL ANALYSIS RESULTS

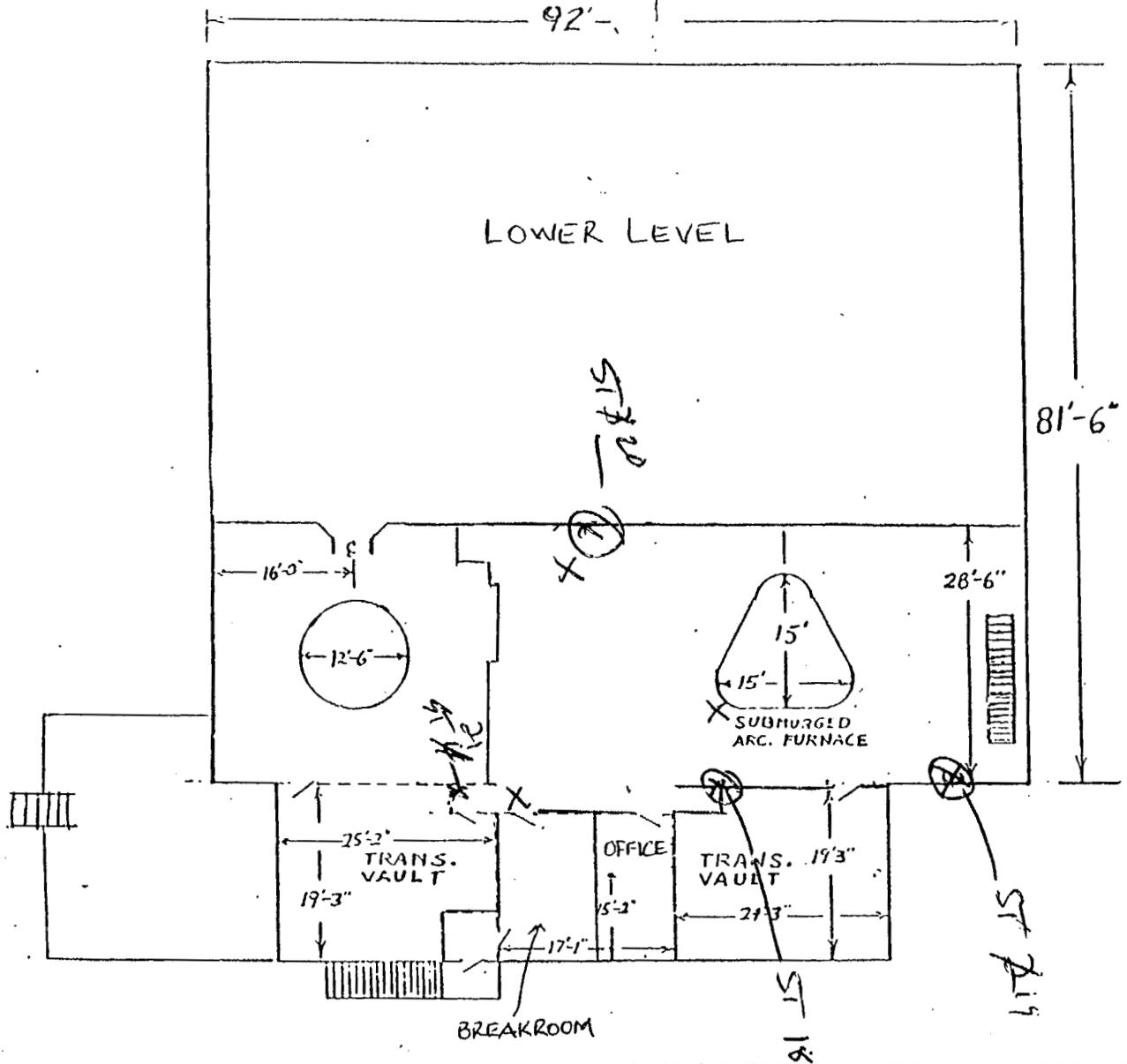
<u>SAMPLE #</u>	<u>WT. % U</u>	<u>WT. % Th</u>
1	0.007	0.100
2	0.040	0.190
3	0.008	0.040
4	0.005	0.028
5	0.020	0.050

ATTACHMENT 3

TLD Locations

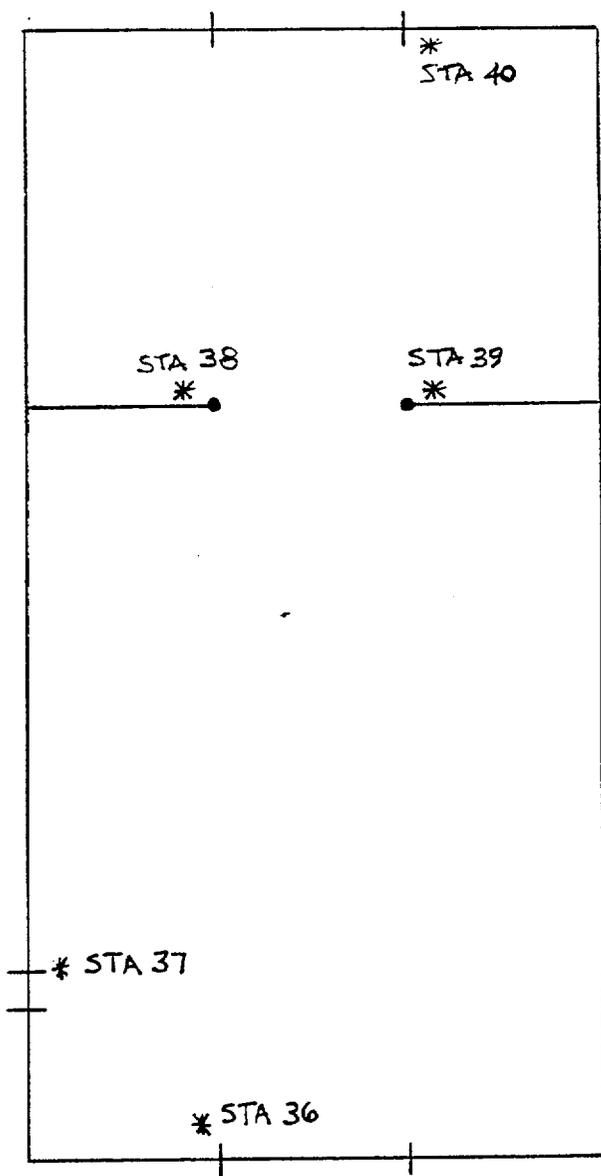


SHIELDALLOY METALLURGICAL CORP.		
SCALE: 1" = 25'	APPROVED BY: <i>[Signature]</i>	DRAWN BY ATM
DATE: 3/6/90		REVISED 10/25/90
DEPT-III MFG BLDG		
REV 1	2	DRAWING NUMBER 11030690

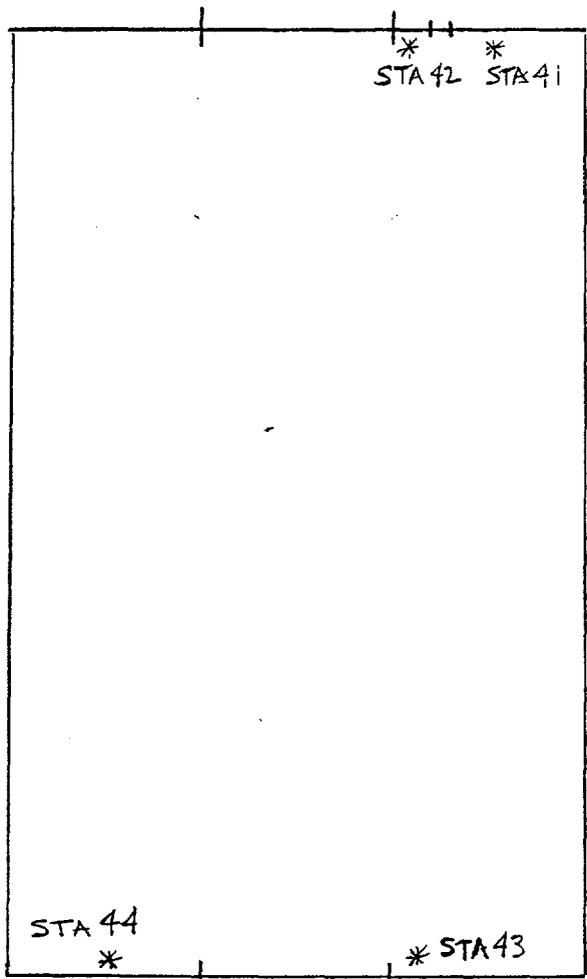


D-III UPPER LEVEL

SCALE: 1" = 20'	APPROVED BY:	DRAWN BY:
DATE: 2 Feb 77		REVISED:

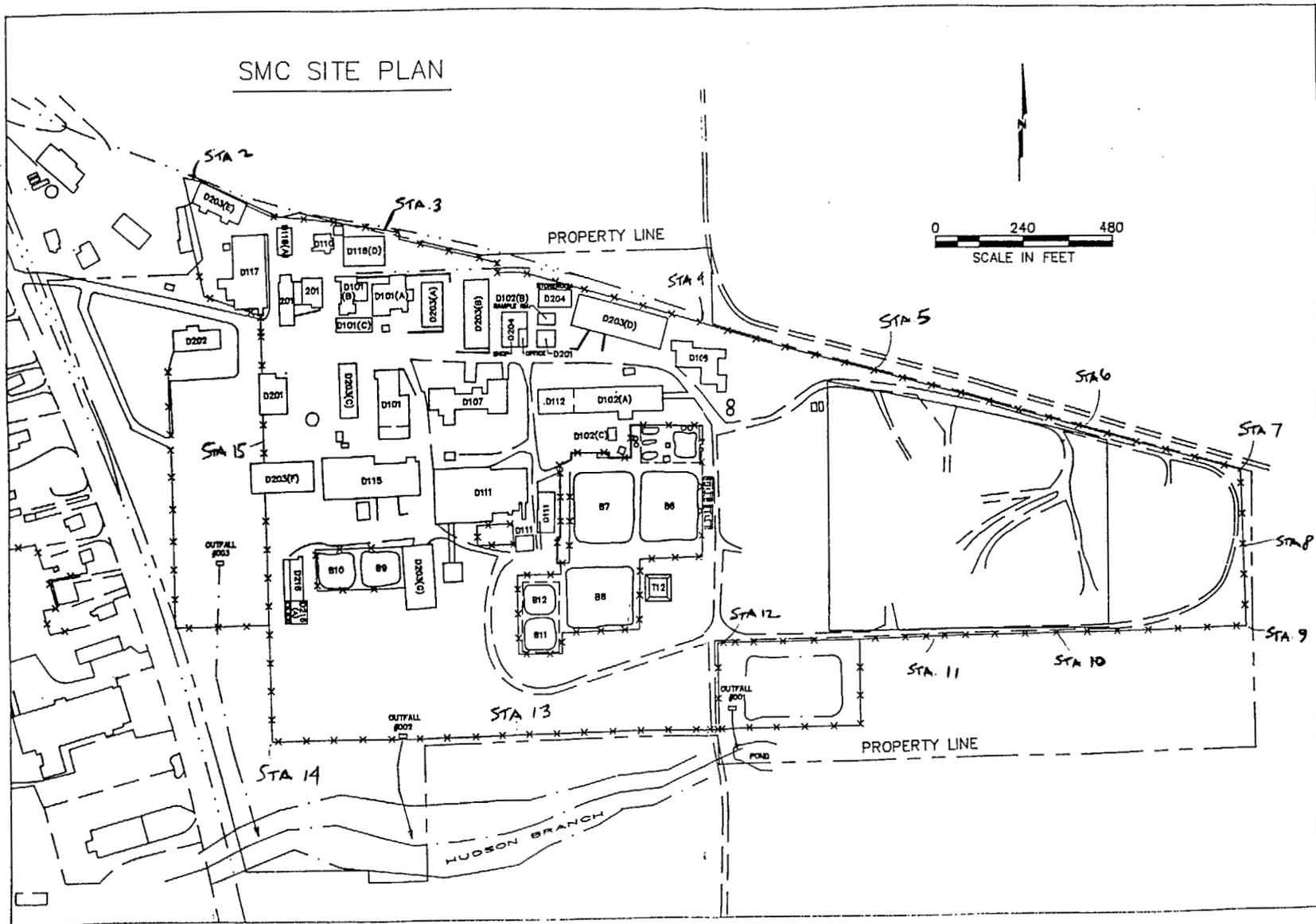


A WAREHOUSE
ENVIRONMENTAL TLD'S



G WAREHOUSE
ENIRONMENTAL TLD'S

SMC SITE PLAN



ATTACHMENT 4

Historical Information

January 27, 1994

John T. Jennings
West Boulevard
Newfield, NJ 08344

Mr. Gary C. Comfort, Jr.
Licensing Section #2
Licensing Branch
Div. Fuel Cycle Safety
US Nuclear Regulatory Commission
Washington, DC 20555

Re: Shieldalloy Stabilization of Columbium Slag at Newfield, NJ

Dear Mr. Comfort:

Subject product was generated over a thirty-eight (38) year period from smelting Columbium bearing ores in the production of Ferro Columbium for the metals industry. Shieldalloy is the only U.S. producer of Fe Cb a product consumed by the steel industry approximating 60,000,000 lbs. annually. The only other source has been Brazil and more recently the C.I.S. countries.

The element Columbium is very important to the Metals Industry in that the addition of 0.010% will increase the yield strength of steel by 5000 psi and has aided in the development of High Strength low Alloy Steel (H.S.L.A.) whereby thinner section size has higher strength than the conventional heavy section sizes in the past thus reducing the overall weight of automobiles and results in higher gasoline mileage to lessen our countries dependence on imports. Additionally its use in Line Pipe Steel to obtain high strength low temperature properties, Aircraft Engines for Commercial and Defense Industries, Submarine Hulls, Bridges, Tunnels and heavy construction has benefited our country in many ways.

Shieldalloy is operating this plant here in a small town in a depressed area of New Jersey where the sales tax has already been reduced to 3% due to the economic conditions in the area. The company employs 250 people, have a payroll of approximately \$10,000,000 dollars annually, pay \$300,000 in local taxes and \$1,500,000 for utilities all of which substantiate the need for this plant to continue operating in this area.

The Slag generated from Columbium production regardless of regulations can hardly be classified hazardous. Shieldalloy employees including the writer have not suffered any ill effects while working with and handling the product over the thirty-eight years of generation. In fact the Slag should be considered a by product that has a value due to its composition (VIZ) Al_2O_3 , CaO, and MgO for desulphurization of Molten steel.

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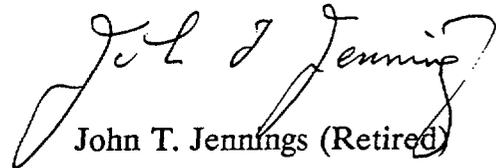
Page 2/Letter to NRC
January 27, 1994

It is my understanding that Shieldalloy Metallurgical Corporation has recommended storing and capping the Cb slag on site as the only possible economic way to resolve the matter and hopefully this will be to NRC's satisfaction and assist Shieldalloy in recovering from Chapter 11 and continue to provide product to the Metals industry and maintain employment locally.

The Federal Government has stored hundreds of acres of Chrome Ore during the past Fifty years (50) under a simple sod from which cattle graze on regularly, without any harm to people or animals and I personally feel that an agreed upon capping should warrant a favorable decision and settle the matter that has been in discussion for a long time.

Once again, we look forward to your assistance in resolving the Columbium slag storage question.

Very truly yours,



John T. Jennings (Retired)

JTJ/mjs

BCC - ~~CSE~~
~~MBH~~
JPV

ATTACHMENT 5
Pyrochlore Analyses

**SHIELDALLOY METALLURGICAL CORPORATION****DECEMBER 1993 - SHIPMENTS**

<u>NO. LOT</u>	<u>U₃O₈</u>	<u>ThO₂</u>	<u>TiO₂</u>
10740	0.19	0.83	3.57
10741	0.19	0.83	3.55
10742	0.26	0.81	3.37



SHIELDALLOY METALLURGICAL CORPORATION

NOVEMBER 1993 - SHIPMENTS

<u>NO. LOT</u>	<u>U₃O₈</u>	<u>ThO₂</u>	<u>TiO₂</u>
10710	0.16	0.81	3.89
10711	0.15	0.82	3.93
10712	0.15	0.84	3.88
10713	0.14	0.87	3.86
10714	0.15	0.89	3.84
10715	0.14	0.89	3.87
10716	0.15	0.88	3.82
10717	0.14	0.88	3.82
10718	0.14	0.89	3.87
10719	0.16	0.86	3.73
10726	0.21	0.79	3.73
10727	0.20	0.77	3.59
10728	0.21	0.78	3.67
10730	0.20	0.78	3.74
10731	0.19	0.79	3.75
10739	0.20	0.83	3.60

Mine
Niobec

Certificat d'analyse
Assay certificate
Lot # 10750

P.O. # 66162 - 06

No. des sacs Bags no.	1 - 5	6 - 9	10 - 13	Total 1 - 13
kg brut / gross kg	7 265.00	5 812.00	5 812.00	18 889.0
kg net / net kg	7 250.00	5 800.00	5 800.00	18 850.0
kg dry / dry kg	7 241.30	5 793.04	5 793.04	18 827.4
% Nb ₂ O ₅	61.9	62.1	61.9	61.96
kg Nb ₂ O ₅	4 487.8	3 601.8	3 590.2	11 679.8
kg Nb ₂ O ₅ dry	4 482.4	3 597.5	3 585.9	11 665.7
% SiO ₂	2.67	2.56	2.57	2.61
% P ₂ O ₅	0.08	0.09	0.08	0.08
% S	0.04	0.04	0.04	0.04
% C	0.06	0.05	0.05	0.05
% Fe	1.94	1.92	1.91	1.92
% CaO	13.0	13.1	13.0	13.0

%H₂O: 0.12

30-Déc-93

Certifié par:

Certified by:

Annie Bolly

Annie Bolly

Chef chimiste / Chief assayer

Les Services TMG Inc.

Mine
Niobec

Certificat d'analyse
Assay certificate
Lot # 10751

P.O. # 66162 - 07

No. des sacs Bags no.	1 - 5	6 - 9	10 - 13	Total 1 - 13
kg brut / gross kg	7 265.00	5 812.00	5 812.00	18 889.0
kg net / net kg	7 250.00	5 800.00	5 800.00	18 850.0
kg dry / dry kg	7 240.58	5 792.46	5 792.46	18 825.5
% Nb ₂ O ₅	60.7	60.7	60.9	60.76
kg Nb ₂ O ₅	4 400.8	3 520.6	3 532.2	11 453.6
kg Nb ₂ O ₅ dry	4 395.0	3 516.0	3 527.6	11 438.7
% SiO ₂	2.74	2.74	2.52	2.67
% P ₂ O ₅	0.10	0.10	0.12	0.11
% S	0.04	0.04	0.03	0.04
% C	0.07	0.06	0.07	0.07
% Fe	2.71	2.65	2.66	2.68
% CaO	12.5	12.5	12.6	12.5

%H₂O: 0.13

30-Déc-93

Certifié par:

Certified by:

Hélène Gohier

Annie Bolly

Chef chimiste / Chief assayer
Les Services TMG Inc.