

March 18, 1988

United States
Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Dear Sirs:

In regards to the written response to the NRC letter dated Feb. 25, 1988, I was asked to answer the information contained within it, within 30 days. This is the letter to that effect.

Enclosed in this letter are copies of the urine analyses that were done in conformity to the CAL letters. Also is enclosed the statement in regards to operating in Nevada and California, as requested on page #8, item C. The copies of the Urine analyses are in conformity to the request on page #9, item D. Also enclosed is an accounting of all the metal from Nuclear Metals in 1986 to Orion Chem. Co. On page #7, item B, Wrangler Labs is ordered to decontaminate the facility in Evanston, Wyoming to the NRC limits for release to the public, and to dispose of source material and waste accordingly. We will be glad to do this, but we have been told that the Tennessee Report is to be followed, as to how and what to do in the decontamination clean up. We can not do anything until we receive that report, which has not been forwarded to us as of March 18, 1988. The inspection took place January 19, 20 and is long delayed in getting to us.

I would like to comment on some of the allegations made against us in the paper. On page #3, quote, "..in all, the state of Utah found 5 contaminated facilities that Mr. Larsen had 'abandoned'." I would like to ask who wrote this sentence and chose the word "abandoned" to describe our behavior in the past. We have been totally responsible for every facility we have been asked to clean up, either by the state of Utah or the NRC, and I resent very much being characterized as "abandoning" any responsibility we were asked to perform. Before we left any site that we rented and worked at, we were surveyed and checked and signed off by the agency inspectors. Any short comings are not from our performance. This pejorative word is typical of the past adversarial characterizations by the State of Utah, and on the whole

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presents a picture of a socially irresponsible person who flees from state to state to escape from compliance to regulations, when in fact the truth is that we want to be treated fairly, and with some understanding that we will make some mistakes in learning what is wanted and why it is wanted. We cannot work with an agency that is adversarial in attitude, and somewhat ambitious to show how tough and regulatorial they are, in order to establish their reputation.

On page #3, quote, "Wyoming informed the NRC of the allegation that it had received concerning improper activities at Wrangler Labs..." The allegation of Wrangler Labs conducting improper activities of its chemical operation in a temporary facility, is again typical of the slantedness of the letter. I, personally, assisted the owner of the facility in contacting the Region IV NRC by giving names and telephone numbers of those to contact. I think the owner was concerned about the chemical smells and radiation signs. I had no wrong doing to hide, that I knew of, and I was confident of any inspection that it would show us as having a clean operation. When Mr. Blair Spitzberg inspected us, the contamination showed just a few minor stains from some spills, that had been cleaned up but showed a somewhat elevated count. This was in November that the first inspection took place. In January another inspection team from Tennessee came and inspected us and found very little contamination again. We had worked almost a year in the facility, and had processed 150 lbs of OU into 300 lbs of UAA catalyst, and if our process were a hazardous operation, we would have had dust all over the facility, and maybe outside the door. But, in fact, we just had some minor contamination spots that are easily cleaned up.

On page #4, item #1, states that I misrepresented to the inspector that my work was only in Utah and Wyoming. When the question was asked, the time frame he was asking it in was not stated, and it sounded to me as just recently. I came forth in the enforcement conference that work

also had been done in California and Nevada, going back 10-11 years ago. The batch in Nevada was a very small amount, mostly drying out crystals done in Nevada so as not to violate the Utah jurisdiction.

On page #4, item 2 states, "The licensee deviated from the commitment described in the November CAL in the baseline analyses were not conducted..." This is not exactly true, as a sample for Kevin was taken before he started to work again on November 11-13. His reading was 14 $\mu\text{gm}/\text{ft}^2$. Mike Larsen and Bruce Noack hadn't worked for me for a long time, and so their baseline levels were assumed to be zero, or lower. I probably should have sampled them, but I guess I was trying to keep expenses down, so I made the assumption on them and didn't get a sample. I should have.

On page #5, item #2 states, "November 10, 1987 CAL, was a failure by the licensee to require individuals who were to perform the processing of the licensed material on hand, to wear air samplers." This is simply NOT true, as we DID wear the lapel air sampler, and have the sample paper with the negative results saved, and I have already shown them to Mr. Blair Spitzberg.

On page #5, item #3 states, "...the DOD purchases UAA from other sources." In talking with Mr. Thomas Quinn, Hysol purchasing agent, he ordered 100 lbs from ROC/RIC last year, which was delivered very slowly and in small batches over a long period of time. After that experience, Hysol re-placed orders with Orion/Wrangler Labs. and has not ordered from any other company, according to his statements. Mr. Larsen was asked some 10 years ago to submit a sample of his work for analysis. After a comparison of several companies samples, Mr. Larsen's company was chosen to produce the UAA catalyst, based mainly on the quality of his catalyst. Previous companies had produced impure UAA, which lacked in catalytic power, and made sub-standard weapons. Those weapons had to be destroyed and many thousands of dollars were lost.

On page #5, item #4, Federal Express doesn't have a drop-off station in Evanston, Wyoming, and so we bring the shipment to the Provo-Orem dispatch office as we direct ourselves home. None of the processing of the material was done in Utah. All of it was done in Wyoming.

Page #5, item #5, states we purchased material from AEROJET HEAVY METALS as if the above were done recently, not noting that the time frame when this happened was 5-6 years ago. The passage sounds like Mr. Larsen bought these materials within the work in Wyoming in 1987, or possibly the year before. In fact, this event does NOT reflect today's behavior, as it has not even happened since then.

Page #6 says, "...in the December 31 CAL, the licensee failed to have two individuals submit urine samples for uranium analyses until Jan. 10, 1988, nine days after the agreed upon date." I would like to respond to this and explain the circumstances, that we actually did try to comply with the CAL. Mention is made of a work date, December 8, where uranium samples were taken after work was completed on the last shipment to Hysol, December 20, 1987. Sampling was done on December 8 and analyzed December 9 by T.M.A. Labs. The results were: JPL $31 \mu\text{g}/\text{L}$; MJL 88 ± 4 ; KN $10 \mu\text{g}/\text{L}$. This sampling was a complete surprise to us, especially MJL's, as there was no trouble in completing the work, and there were no spills during the work. I asked MJL to write up any possible occurrence to the best of his knowledge, which was forwarded to Mr. Spitzberg. We decided to try another lab in Wyoming called Energy Labs, because TMA Labs were both expensive and slow,

and their results that were relayed to us on December 9-10 were much higher (220 mgm/L) than when they retested and got 88 mgm/L on December 23, 1987. I got urine samples in the pharmacy jars which I considered to be clean, on December 28, 1987 for MJL and JPL before the telephone call from Mr. Blair Spitzberg on Dec. 30, and from Mr. Bangarter December 31. They asked to sample every 3 days from MJL and JPL until two tests were below limits, which we did from December 31, 1987 to January 3, 1988. We didn't send a blank with our tests, due to the fact that Energy Labs always runs a blank urine sample with every test analysis that they do. I realize now that this part of the CAL was supposed to be done by me. It is NOT true that "We didn't send samples until January 10, nine days after the agreed upon date." The CAL was performed. In the future, we will always run blanks or get NRC permission for the lab to use a blank. We sent the box Federal Express on January 6, 1988. It was impossible to know that when the box arrived, it would be damaged and that it would be leaking inside. We were informed after the analyses were performed that the box was damaged. I asked several questions about UV fluorescence and found out that organic compounds, lanolin, etc, also fluoresce, so I tested UV lights on the pharmacy jars, and some of the fluoresced. I then asked Energy Labs to send me some known clean containers, which they did. We sampled on January 10, 1988 and on January 13, 1988 for MJL and JPL and the results were less than 5 mgm/L. We didn't send the results of the lab tests on December 28, 1987 - January 3, 1988 as the samples were questionable, due to the box being damaged and the fluorescence of the pharmaceutical jars. We should have done so, I realize now.

When Utah, in November, 1986, caused us to stop work with a cessation order, we were in the middle of preparing 60 lbs of DU metal into UAA. It was all in various stages of the process, and I didn't know what to do with it. I didn't want to throw it away, so I called the NRC in Washington D.C. and asked if a company could work under a general license in another state, even though the same person had a specific license in his home state. I was told that as long as the limits of 15 lbs/time, 150 lbs/yr. were met, there would be no conflict. So we finished up the material out-of-state in Nevada and Wyoming. I did not want to violate Utah orders. We then started up a new company in Wyoming, called Wrangler Labs, and ordered 15 lbs. of DU from Nuclear Metals. When we bought this material, it was not done deceptively, under a different name of Wrangler Labs. Paul Cleary and others at Nuclear Metals had a clear understanding that John Larsen was Wrangler Labs in Wyoming, and they were given the names and telephone numbers of the NRC in Washington D.C., so they could get confirmation that it was permissible to ship to John Larsen at Wrangler Labs in Evanston, Wyoming.

The reason we chose Evanston, Wyoming to work in was that we felt we would receive more fair treatment under a federal NRC jurisdiction, than we were receiving from the Utah Bureau of Radiation under Mr. Larry Anderson. We started the new company with a new understanding and resolve for absolute confinement of source material and waste materials; for running a good operation with safety and cleanliness using stainless steel equipment and counter tops, monitoring with

TLD badges, survey swipes of work areas for cleanliness, and installation of a scrubber unit and microwave ovens for drying processes. On the whole, we were much improved in our work operations.

We willingly assisted in directing the inspection, expecting we were in good working operation, and would be proven so through the inspection results. I think it was shown that considering a few areas, our operation is clean. Even though we were asked to clean up some elevated stains on a few ground surfaces, we were alleged to be a potentially hazardous operation. I guess every chemical manufacturing operation is potentially at risk to some degree or another. All I can say is that we were trying very hard to be an improved company, doing our best, while keeping the spills, etc. to a minimum as we work 150 lbs of metallic source material into 300 lbs of UAA catalyst.

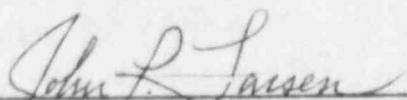
In answer to page 8, item C, I processed a small batch (14 lbs) of UAA in Nevada, mostly just the drying-out stage of the crystals from the material left incomplete by the Utah Order to Cease in November, 1986. This was done in December, 1986, and was completed in one day, out on a road in the desert near Mesquite, Nevada. The material was sent out from Provo-Orem Federal Express dispatch office.

Previous to coming to Utah we lived in California, and did work on a truck in small amounts for small orders in various locations in the desert, and in a vacant lot, so as not to disturb anyone. This was a long time ago and the details are somewhat hazy. Please refer to the letter that was written to Mr. William Fisher, December 28, 1987. A copy is enclosed.

In summary, I want to say that we do not have the time nor the means to defend ourselves legally against these letters from the NRC. We don't know of any lawyers to contact about the legal points of law that need to be responded to within twenty (20) days. Also, I don't want to ask for a hearing that will slow down my specific license application. It appears to me that I am running a good chemical operation, with two inspections showing minimal contamination. The allegations against me came from the enforcement hearing and from the questions that were probably misunderstood, and which I have tried to answer in this letter. Basically, I am a one-man company, without the means and man-power to fight the U.S. government. I rely on their justice and good-will in order to continue producing a catalyst for the government's own use.

Please find an enclosed accounting of the source materials received and shipping during 1986 and 1987. I was asked to account for 100# of metal discrepancy which I hope this paper will show you, was efficiently accounted for, at 92% yield per year. The remaining 8% metal is tied up in the waste liquids, which we either dispose of or reclaim the crystals and add to future shipments. All the materials are accounted for, and transferred to properly licensed people.

Sincerely,


John P. Larsen, Chemist-Owner

P.S. It is strange to me that nothing has ever been mentioned about the positive steps we have made in ^{our} process. We now wear badges while working our chemical; we have invested in air-samplers (lapel); 5 new survey instruments, a newly-purchased fluorimeter, numerous stainless-steel pieces of equipment; etc. We are committed to continually improving our operation and we welcome any suggestions that you may offer.

RECORDS OF MATERIALS
RECEIVED AND SHIPPED

SHIPMENTS 1986 in UTAH

1/20/86	36.874# (45.1%)	=	16.630#D.U.
1/28/86	26.989# (46.3%)	=	12.500
2/3/86	47.673# (46.3%)	=	22.073
2/26/86	27.553# (47.0%)	=	12.950
4/29/86	30.753# (46.1%)	=	14.177
5/2/86	30.706# (45.5%)	=	13.971
6/16/86	58.598# (47.0%)	=	27.541
7/7/86	30.172# (45.9%)	=	13.849
7/8/86	30.968# (46.2%)	=	14.307
7/14/86	35.363# (45.5%)	=	16.090
8/4/86	30.147# (45.9%)	=	13.837
8/13/86	15.901# (48.0%)	=	7.632
9/4/86	31.837# (45.5%)	=	14.486
9/22/86	30.038# (46.5%)	=	13.968
10/7/86	16.620# (45.9%)	=	7.629
11/3/86	30.000# (48.1%)	=	14.430
12/9/86	14.958# (47.0%)	=	7.030
2/2/87	28.658# (47.0%)	=	13.469
2/9/87	30.220# (46.5%)	=	14.052
2/17/87	25.240# (47.8%)	=	12.065
3/3/87	34.420# (46.5%)	=	16.008#D.U.

690.108# U.A.A.
shipped in 86.

SOURCE MATERIAL RECEIVED (NUCLEAR METALS)

1/9/86 60 lbs.

3/11/86 60 lbs.

6/6/86 60 lbs.

6/26/86 40 lbs.

8/20/86 60 lbs.

10/6/86 60 lbs.

340 lbs. Received 86.
approximate 315 lbs. shipped
1720/86 = 3/3/86

315# = 92.64% YIELD
340# in 1986

298.694 + (16.5# crx. recovered later) = 315.194#D.U.
in 1987 shipped in 86

SHIPMENTS 1987 in WYOMING

3/24/87	15.704# (48.5%)	=	7.616#D.U.
3/29/87	14.859# (47.5%)	=	7.058
4/7/87	14.056# (46.6%)	=	6.550
4/18/87	17.186# (46.1%)	=	7.923
4/30/87	19.184# (45.9%)	=	8.806
6/1/87	35.900# (46.9%)	=	16.694 (10.5# added crx.)
6/13/87	16.658# (46.8%)	=	7.796 from waste)
6/27/87	23.660# (46.5%)	=	11.002 (4.0# added crx.)
7/12/87	26.929# (47.2%)	=	12.709 from waste)
8/6/87	17.456# (46.4%)	=	8.100
8/7/87	18.613# (46.5%)	=	8.655 (2.0# added crx.)
9/3/87	28.742# (47.5%)	=	13.652 (16.5#) from waste)
9/30/87	21.811# (46.5%)	=	10.142 (apx.)
10/19/87	27.335# (46.8%)	=	12.793
12/20/87	34.910# (46.8%)	=	16.338#D.U.

333.003# U.A.A.
shipped in 87.

155.834#--(16.5# crx. from waste)

3/3/87 15 lbs.

3/30/87 15 lbs.

4/22/87 15 lbs.

6/2/87 15 lbs.

6/27/87 15 lbs.

7/18/87 15 lbs.

8/9/87 15 lbs.

9/10/87 15 lbs. shipped in 87

10/1/87 15 lbs.

10/20/87 15 lbs.

139# = 92.89% YIELD
150# in 1987

150 lbs. Received 87

The remaining 25 lbs (340# - 315#) was disposed of with the waste shipment to the University of Utah. There is still about 10 lbs in the waste for 1987 (150# - 139.8#), which we will dispose of to authorized agents of waste or recover for Hysol U.A.A. catalyst shipments in the future.

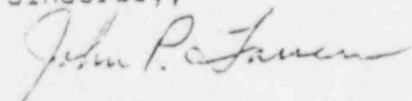
December 28, 1987

Gentlemen:

This letter is to confirm the conversation between myself and Mr. William Fisher, USNRC, Region IV. Last winter, I processed 6 lbs. of metal in Nevada. I chose an isolated location, in the Nevada desert, and worked off the back of my 2 ton truck. I was extremely careful to not contaminate the area. I was forced to work in Nevada at the time, because of the great need of U.A.A. catalyst for the Phthalic Anhydride plastic reaction, which is shut down if the catalyst is not present. The State of Utah had prohibited me from processing any material in Utah, so I processed this small amount in Nevada, under another jurisdiction, so as not to be in violation.

As for California, this was over 10 years ago, and I manufactured my chemical on the back of my truck, on a vacant piece of property in La Crescenta, and in various isolated locations in the desert areas of California. At the time, my company was very small, and I was of little concern as a health hazard.

Sincerely,


John P. Larsen

*Tennessee Inspectors
Chase Jan 19, 20*

TMA
Thermo Analytical Inc.

TMA/Eberline

5635 Kircher Boulevard NE

Post Office Box 3874

Albuquerque, NM 87190-3874

(505) 345-9931

ORION CHEMICAL CO 6267
JOHN LARSON
3833 N. SHERWOOD DRIVE
PROVO UT 84604

4

OUR RECORDS SHOW THE FOLLOWING
NUMBER OF BADGES IN THE
INDICATED WHOLE BODY EXPOSURE
RANGES FOR THE PERIOD FROM
JAN. 01, 1987 TO DEC. 31, 1987

Gentlemen:

This statement from TMA dosimetry
validates our contention that the radiation
exposure in our process is minimal, which exposure
was a major concern to the Utah Bureau of Radiation.
They should have known about the low level exposure
rate of depleted Uranium.

BADGES	EXPOSURE RANGE
3	LESS THAN .010 REM
0	.010 TO .099 REM
0	.100 TO .249 REM
0	.250 TO .499 REM
0	.500 TO .749 REM
0	.750 TO .999 REM
0	1.000 TO 1.999 REM
0	2.000 TO 2.999 REM
0	3.000 TO 3.999 REM
0	4.000 TO 4.999 REM
0	5.000 TO 5.999 REM
0	6.000 TO 6.999 REM
0	7.000 TO 7.999 REM
0	8.000 TO 8.999 REM
0	9.000 TO 9.999 REM
0	10.000 TO 10.999 REM
0	11.000 TO 11.999 REM
0	12.000 OR MORE REM



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76011

NOV 12 1987

In Reply Refer To:
Docket: 99990004/8704/Cal 87-24
General License: Wrangler Labs, Evanston, Wyoming
EA 87-223

Larsen Labs, Incorporated
ATTN: John P. Larsen, President
3853 North Sherwood Drive
Provo, Utah 84604

Dear Mr. Larsen:

SUBJECT: CONFIRMATION OF ACTION LETTER

This is to confirm the conversation between Mr. John Larsen, Wrangler Labs and Mr. R. J. Everett, USNRC, Region IV on November 10, 1987. Based on this conversation, it is my understanding that Wrangler Labs, and/or Larsen Labs, and/or Orion Chemical is taking the following actions:

Immediately cease all receipt of, and effective November 13, 1987, cease all processing of licensed material (depleted uranium) until such time that it is further authorized by the NRC. The period between November 10-13, 1987, may be used to complete the processing of the licensed material on hand according to your procedures so long as such processing does not exceed 15 pounds of source material. The individuals performing this work will wear lapel air samplers to determine personnel exposure to airborne radioactivity, and will submit urine samples for uranium determinations beginning the procedures, and between 48 and 96 hours following completion of the procedures.

Effective November 13, 1987, secure all licensed material on hand and any equipment previously used to process licensed material at Evanston, Wyoming in its present location at Jay-Gee Industrial Park, Unit 1214, Evanston, Wyoming. Prevent all access, disposal, or removal of licensed material from this location until further authorized by the NRC. Shipments of final product, up to 15 pounds of source material, may continue.

Arrange to have your employee identified by the initials B. N. whose February 18, 1987, urine bioassay measured 108 ug/l, submit a urine sample to a qualified laboratory to be tested for uranium and albuminuria. Report the results of the test to this office upon receipt.

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

*From
Cliff
Larsen
Sampled
NCV 16
Scrub samples
Stripper
Selling to NRC
glass
Sample plus
contaminated
Rising plus
with phosporus
first year*

87-1200-359

TMA
Thermo Analytical Inc.

TMA/Norcal

2030 Wright Avenue

Richmond, CA 94804-0040

(415) 235-2633

Mailing Address

P.O. Box 4040

Richmond, CA 94804-0040

November 25, 1987

Ref: TMA/Norcal CN 4438

Mr. John P. Larsen
Orion Chemical Company
3853 North Sherwood Road
Provo, UT 84604

Dear Mr. Larsen:

The results of the five urine samples we received for analysis on 19 November 1987 have been completed and are shown below.

NOV 16

Sample Number	Total Uranium $\mu\text{g/L} \pm 2\sigma$	DEC. 1 ANALYSIS (PHARMACY)
John P. Larsen, 529-54-7655	53 ± 3	12 ± 3 2253 (GLASS)
Michael J. Larsen, 528-53-5544	41 ± 2	26 ± 3
Bruce Noack, 501-84-9543	26 ± 2	7 ± 3
Kevin Noack(I), 502-88-7130	46 ± 2	45 ± 3
Kevin Noack(II), 502-88-7130	14 ± 2	BASILINE

We appreciate this opportunity to be of service.

Very truly yours,

MPH

Marvin P. Hunt
Program Manager
TMANorcal Corporation

MPH/ss

*We think
these glass
jars were
contaminated
Dec 1 Glass - 22 Plate 12*

*Resample - attach date
Resample operation*

*ARUP Labs
583-2787
Beckman Kie
Sun 21A*

TMA
Thermo Analytical Inc.

TMA/Norcal

2030 Wright Avenue

Richmond, CA 94804-0040

Mailing Address

P.O. Box 4040

Richmond, CA 94804-0040

(415) 235-2633

December 1, 1987

Ref: TMA/Norcal CN 4438

Mr. John P. Larsen
Orion Chemical Company
3853 North Sherwood Road
Provo, UT 84604

Dear Mr. Larsen:

The results of the five urine samples we received for analysis on 30 November 1987 have been completed and are shown below.

Sample Number	Total Uranium $\mu\text{g/L} \pm 2 \sigma$
------------------	---

John P. Larsen, 529-54-7655

12 ± 3

John P. Larsen, 529-54-7655, Glass

22 ± 3

Michael J. Larsen, 528-53-5544

26 ± 3

Bruce Noack, 501-84-9543

7 ± 3

Kevin Noack, 502-88-7130

45 ± 3

— Bruce OK'd

We appreciate this opportunity to be of service.

Very truly yours,

Marvin P. Hunt

Marvin P. Hunt
Program Manager
TMANorcal Corporation

MPH/ss

*pharmaceutical
glass*



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV

611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76011

DEC 8 1987

In Reply Refer To:
Docket: 9999004/8704/CAL 87-24A
General License: Wrangler Labs, Evanston, Wyoming
EA 87-223

*High-Level
Contamination
CAL - Not follow*

Larsen Labs, Incorporated
ATTN: John P. Larsen, President
3853 North Sherwood Drive
Provo, Utah 84604

Dear Mr. Larsen:

SUBJECT: CONFIRMATION OF ACTION LETTER

This is to confirm the conversation between Mr. John P. Larsen, Wrangler Labs and Mr. William L. Fisher, USNRC, Region IV on December 4, 1987. Based on that conversation, it is my understanding that Wrangler Labs, Larsen Labs, and/or Orion Chemical will take the following actions:

- pg 113
mde 88*
1. By December 8, 1987, obtain, from the following persons, urine samples for uranium analysis by a reputable bioassay laboratory. These urine samples are to be voided into containers known to be free of uranium contamination, and the date and time of voiding are to be documented.
*J. P. L. = 31 - don't know what
M. J. L. = 68 - don't know why
K. N. = 10 OK*
 2. Provide this office the address, if available, or a description of the California and Nevada location(s) at which depleted uranium in any form or quantity has at any time been received, processed, or shipped by Mr. John P. Larsen or by any other person on Mr. Larsen's behalf.
 3. Dispose of licensed material (depleted uranium) remaining in the Evanston, Wyoming facility. Material in process but not recovered as UAA when operation ceased on November 13, 1987, may be either: (1) processed to UAA and transferred to a customer or (2) disposed of as radioactive waste.
Report sent Shipment 12/20/88
 4. Decontaminate all surfaces and equipment within the Evanston, Wyoming facility to or below the following levels:

Average* fixed - 5,000 dpm alpha per 100 cm²
Maximum fixed - 15,000 dpm alpha per 100 cm²
Removable - 1,000 dpm alpha per 100 cm²

*Average over an area not greater than 1 square meter.

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

TMA

Thermo Analytical Inc.

TMA/Norcal

2030 Wright Avenue

Richmond, CA 94804-0040

(415) 235-2633

Mailing Address

P.O. Box 4040

Richmond, CA 94804-0040

December 23, 1987

Ref: TMA/Norcal CN 4438

Mr. John P. Larsen
Orion Chemical Company
3853 North Sherwood Road
Provo, UT 84604

Dear Mr. Larsen:

The results of the three urine samples we received for analysis on 9 December 1987 have been completed and are shown below.

Sample Number	Collection Date	Total Uranium $\mu\text{g/L} \pm 2\sigma$
John P. Larsen, 529-54-7655	12/8/87	31 ± 3
Michael J. Larsen, 528-53-5544	12/8/87	88 ± 4
Kevin Noack, 502-88-7130	12/8/87	10 ± 3

We appreciate this opportunity to be of service.

Very truly yours,

Marvin P. Hunt

Marvin P. Hunt
Program Manager
TMANorcal Corporation

MPH/ss

*Talked Blair Dec 30
extension for time
to clean & transfer*

Worked Dec

*Quantum
Hunt
VI
fluent*



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76011

DEC 31 1987

In Reply Refer To:
Docket: 9999004/8704/CAL 87-24B
General License: Wrangler Labs, Evanston, Wyoming
EA 87-223

Larsen Labs, Incorporated
ATTN: John P. Larsen, President
3853 North Sherwood Drive
Provo, Utah 84604

Dear Mr. Larsen:

SUBJECT: CONFIRMATION OF ACTION LETTER

This is to confirm the conversation between Mr. John P. Larsen, Wrangler Labs and Mr. Richard L. Bangart, USNRC, Region IV on December 31, 1987. Based on that conversation, it is my understanding that Wrangler Labs, Larsen Labs, and/or Orion Chemical will take the following actions:

1. Immediately cease all activities involving depleted uranium at the Evanston, Wyoming facility until further notice from the NRC. Included are activities involving equipment or waste handling, liquid volume reduction, and decontamination. This ~~work stoppage~~ will stay in effect until such time as the NRC determines that work can be conducted without exposing individuals to elevated levels of uranium.
2. By January 1, 1988, obtain from the following persons, urine samples for uranium and albuminuria analysis by a reputable laboratory. Submit with these samples a ~~background urine sample~~, for uranium analysis only, obtained from an individual who has not worked with depleted uranium and is known to have no lung or systemic uranium burden other than from natural background.
820/110
J.P.L.
M.J.L.
Du 31
for work
open
3. Collect additional urine samples for uranium analysis only from the two individuals identified above at a frequency of once every three (3) days until such time that the results of two consecutive samples are less than 30 $\mu\text{g/l}$. All urine samples are to be voided into containers known to be free of uranium contamination, and the date and time of voiding are to be documented.
4. Submit copies of the results of urine sample measurements to this office as you receive them.

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

880-110505



ENERGY LABORATORIES, INC.

PO BOX 3258 • 254 NO CENTER ST • CASPER WY 82602 • PHONE (307) 235-0515

LABORATORY REPORT - BIOASSAY RESULTS

Client: ORION-WRANGLER CHEMICAL COMPANY

Submittal Date: 01-07-88
Date Received: 01-08-88
Assay Date: 01-08-88
Report Date: 01-25-88

Sample MTL JPL
Because of Dec 9
JPL 31
MTL 88
analyzed Dec 23

Shipment
was delivered
from
open

Lab No.	Sample I.D.	S.S.	Sample Date	[Uranium] ug/l
88-0161	J. Larson	529-54-7655	12-28-87 12:00	35.6
88-0162	J. Larson	529-54-7655	12-31-87 12:00	161
88-0163	M. Larson	528-53-5544	12-28-87 12:00	62.8
88-0164	M. Larson	528-53-5544	12-31-87 12:30	58.5
88-0165	M. Larson	528-53-5544	01-03-88 12:00	282
	Duplicate			282

Blank

NOTE: Samples received leaking - probable sample contamination in collecting specimens from plastic bags.

INTERNAL QUALITY ASSURANCE CHECKS:

Laboratory #	Original Conc. ug/l	Spike Value ug	OBS/ Assay Conc ug/l	Recovery dec. %
88-0163	62.8	30	94.1	1.014
ELI Blank	- <5			
ELI 15	- 15.1			
ELI 30	- 29.6			

NOTE: Samples split and analyzed in accordance with US-NRC Regulatory Guides 4.15 and 8.22. Information concerning removable alpha contamination at the laboratory analysis work areas is attached to this report.

LABORATORY REPORT - BIOASSAY RESULTS

Client: ORION-WRANGLER CHEMICAL COMPANY

Submittal Date: 01-19-88
Date Received: 01-20-88
Assay Date: 01-21-88
Report Date: 01-25-88

Lab No.	Sample I.D.	S.S.	Sample Date	[Uranium] ug/l
88-0286	JPL	529-54-7655	01-10-88 12:00	<5
88-0287	MJL	528-53-5544	01-10-88 12:00	<5
88-0288	→ SP		01-10-88 12:00	<5
	Duplicate			<5
88-0289	MJL	528-53-5544	01-13-88 12:00	<5
88-0290	JPL	529-54-7655	01-13-88 12:00	<5
88-0291	→ TON		01-13-88	<5

INTERNAL QUALITY ASSURANCE CHECKS:

Laboratory #	Original Conc. ug/l	Spike Value ug	OBS/ Assay Conc ug/l	Rec de
88-0286	<5	15	15.0	0.7
88-0289	<5	30	28.5	0.7

ELI Blank - <5
ELI 15 - 13.9
ELI 30 - 31.3

NOTE:

Samples split and analyzed in accordance with US-NRC Regulatory Guides 4.15 and 8.22. Information concerning removable alpha contamination at the laboratory and work areas is attached to this report.