

30-14821

Recd. 7/24/85

Jim W. Mount

A.L. Jody

May 13, 1985

Reich Geo-Physical, Inc.
1019 Arlington Drive
Billings, Montana 58101

Attention: Keith A. Reich, RSO

Re: Inspection of Radioactive
Material License No. 33-09909-01

Gentlemen:

This letter relates to an inspection of the activities of Reich Geo-Physical, Inc., which are authorized by the above-referenced North Dakota Radioactive Material License. This inspection was performed on May 8, 1985, by Dale P. Patrick and Jeffrey L. Burgess of this Department. As noted during the discussion with Dale P. Patrick and Jeffrey L. Burgess, which followed the inspection, no items of noncompliance were observed. The radiation safety program and operations appear to be well organized and conducted.

Sincerely,

Dana K. Mount, P.E.
Director, Div. of
Environmental Engineering

DKM/DPP:aks

B508020437 B50724
NMSS LIC30 PDR
25-18304-01

Rec'd E x 1
Applicant

Inspection Report
(Well Logging)

1. Licensee: Reich Geo-Physical, Inc.
2. License Number(s): 33-09909-01
3. Type of Inspection: Unannounced/Routine
4. Date of Inspection: May 8, 1985
5. Inspected By: Dale P. Patrick/Accompanied by Jeffrey L. Burgess
6. Date of Last Inspection: September 27, 1984
7. Interviews:

<u>Name</u>	<u>Title</u>
Keith Reich	Owner/RSO.

8. Discussion with Licensee Following Inspection:

- A. Highest Level of Management Contacted
for Exit Meeting: Keith Reich, Owner/RSO
- B. Discussion with:
 - 1) Member of Management Keith Reich, Owner/RSO
 - 2) Other
- C. Discussion of Findings of Previous Inspection:
Leak Test Frequency
Survey Meter Calibrations
- D. Other Topics Discussed:

Items on this Report

9. Organization & Administration:

- A. Organizational structure as described in application
or letter dated _____, or as listed below.
- B. Other: Keith Reich, Owner/RSO
- C. List primary licensee contact: Name Keith Reich
Phone (406) 252-9428
- D. Personnel:
None

10. Training and Qualification of Personnel:

- A. Radioactive material users named in license:
Yes _____ No x 1 user (currently only one user)
- B. Approved training program: Yes x No _____
Deficiencies noted: Yes _____ No x
- C. Training provided by: Radiation Consultants (Keith Moon)
- D. Retraining: Yes _____ x No _____
1) Frequency: Every 5 years (refresher course)
2) By whom: Radiation Consultants (Keith Moon)
3) Scope: Basic Health Physics, Safety, Equipment Usage
4) Retraining records reviewed: Yes x No _____
- E. Instructions to workers per 33-10-10-01.2.:
Yes x No _____

11. Inspection and Maintenance:

A. Included in operating and emergency procedures:

Yes x No

B. Inspection and Maintenance Check: Yes x ^{Visual} No

C. Six Month Frequency: Yes x No

D. Record of results: Yes No x

E. Describe inspection and maintenance program:

Inspect source and equipment daily prior to use to be sure that there are no problems with cables, connectors, etc.

12. Health Department Regulations and Licensee's Operating and Emergency Procedures:

A. Regulations and Operating and Emergency Procedures

furnished to all users" Yes x No

1) Are Operating and Emergency procedures approved by the Department: Yes x No

B. Licensee maintains a utilization log: Yes x No

C. Utilization log contains all required information:

Yes x No

D. Licensee makes physical inventories: Yes x No

E. Inventories contain all required information:

Yes x No

F. Quarterly: Yes x No

G. Procedures in event a sealed source is lost downhole:

Try to fish out lost source and if after a reasonable length of time it cannot be retrieved, then notify State Department of Health. *Reich has never been unsuccessful at retrieving a sealed source down hole.*

13. Uses of Materials, Facilities and Equipment :

A. Radioactive material inventory on: 5/6/85

<u>Quantity</u>	<u>Isotope</u>	<u>Source S/N</u>	<u>Storage Device</u>	<u>S/N</u>
<u>15.5 mCi</u>	<u>Am-241</u>	<u>B-351</u>	<u> </u>	<u> </u>
<u>25 mCi</u>	<u>Am-241</u>	<u>B-085</u>	<u> </u>	<u> </u>
<u>125 mCi</u>	<u>Cs-137</u>	<u>CSU-192</u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

1) Are procurement and use of radioactive materials in accordance with license requirements: Yes x No

B. Scope of program: 100 holes logged per month

C. Facility Description:

Sources are stored in tools which are locked within company logging vans.

D. Survey Meters:

1) Calibrated and operable instruments available and used: Yes x No

2) Type and number available: _____
Ludlum Model 3 (GM Type)

3) Is meter available for each jobsite/truck:
Yes X No

4) Calibrated by: R/A Services, Inc.

5) Is calibration method authorized: Yes x No

6) Calibrated at 6 month intervals Yes ☒ No ☐

7) 0.1mR/hr through 20mR/hr can be measured:

Yes ☒ No ☐

8) Instrument calibration:

Instrument No.

Last Calibration Date

SN# 11898 (Ludlum 3)

10/10/84

Telecon with R/A
Services 5/9/85

SN# 8075 (Ludlum 2)

4/10/84

(Debbie) Received
3/19/85

Calibrated 4/10/85

The instruments are calibrated on a staggered schedule.

14. Personnel Monitoring Control:

A. Film or TLD badge supplier ICN

B. Badge exchange frequency Monthly

C. Reports reviewed by Keith Reich

D. Frequency of report review Monthly

E. Records reviewed for period 9/84 to 4/85

by inspector

F. Each individual is assigned film badge: Yes ☒ No ☐

G. Control badge: Yes ☒ No ☐

H. Unusual exposures or incidents (33-10-04-05.3. and 4.):

None

15. Leak Tests:

- A. Leak test method approved: Yes ☒ No ☐
- B. Model of leak test kit: Suntrac (Sit-Kit)
- C. Wipe performed by Keith Reich
- D. Test at 6-month intervals: Yes ☒ No ☐
- E. Results of tests: All <0.005 mCi
- F. Records reviewed for period 4/30/84 to 4/8/85

16. Surveys

- A. Area or facility survey conducted (33-10-04-03.1):
(of package upon receipt)
Yes ☐ No ☐ N/A
- B. Area or facility survey recorded (33-10-04-04.1.b):
(of package upon receipt)
Yes ☐ No ☐ N/A
- C. Survey records reviewed for period 10/18/84 to 5/8/85
- D. Maximum radiation levels in unrestricted areas
(33-10-04-02.5.): 2 mR/hr
- E. Vehicle survey (33-10-04-03.1.): Yes ☒ No ☐
- F. Records of vehicle surveys (33-10-04-05.1.b.):
Yes ☒ No ☐ ~~N/A~~

17. Posting and Labeling:

- A. CHRA posted: Yes ☐ No ☒
- B. CRA posted: Yes ☐ No ☒
- C. CRM posted: Yes ☒ No ☐
- D. In accordance with 33-10-04-03.3.: Yes ☒ No ☐
- _____
- _____
- _____

- E. Container or devices properly labeled: Yes ☒ No ☐
- F. Storage room or area properly posted: Yes ☒ No ☐
- G. Vehicle placarding per DOT Regs: Yes ☒ No ☐
- H. Posting of notices to workers (33-10-10-01.1):
(Regs, Licence, SOP)
Yes ☒ No ☐
- I. Posting of "Notice to Employees" (RAD 681) (33-10-10-01.1.c.):
Yes ☒ No ☐

18. License Conditions:

- A. All license conditions reviewed: Yes ☒ No ☐
- B. Deficiencies noted: Yes ☐ No ☒
- C. If "Yes" explain: N/A

19. Questioning of Workers:

- A. Name and Title of Worker: N/A
- B. Is Adherence to Safety Procedures Adequate:
- C. Comments:

20. Independent Measurements:

- A. Instrument Victoreen Model 471 Ion Chamber
- B. Calibration date 3/27/85
- C. Describe measurements and results <0.5 mR/hr at 6
inches from source
- _____
- _____
- _____
- _____

21. Receiving and Shipping of Radioactive Materials:

- A. Procedures for picking up, receiving, and opening of packages (33-10-04-03.7.): Yes X No _____
- B. Written procedures: Yes _____ X No _____
- C. Shipping incidents since last inspection: Yes _____ No X
- D. Survey of package when received (33-10-04-03.7.c.(1)): Yes _____ No _____ N/A
- E. Record of survey of package (33-10-04-05.1.b.): Yes _____ No _____ N/A
- F. Shipment of sources since last inspection: Yes _____ No X
- 1) Only shipping container authorized by the license have been used: Yes _____ No _____ N/A
- 2) Shipping papers and package labeling are properly completed: Yes _____ No _____ N/A
- 3) All radioactive material transferred as authorized (33-10-03-07.1.): Yes _____ No _____ N/A
- 4) Radioactive material transfer records are maintained (33-10-03-07.1.): Yes _____ No _____ N/A

22. Tracer Studies Conducted:

Yes _____ No x If yes, is survey meter
available at each jobsite/vehicle? Yes _____ No _____

Comment: _____

23. Inspection Summary:

A. Items of Noncompliance:

None

B. Recommendations:

None

Date of Report: May 10, 1985

Submitted By:

Dale P. Patrick

Dale P. Patrick
Environmental Scientist
Radiation Control Program
Div. of Environmental Engineering

DPP:pkm

Review of Inspection Report (to be completed by supervisor)

- A. Review by Whom: *Jeffrey L. Burgess*
- B. Title: *Manager, Radiation Control Program*
- C. Date: *5-13-85*
- D. Did Reviewer Accompany the Inspector? *Yes*
- E. Comments: *Mr. Patrick's inspection techniques were reviewed by Mr. Burgess. Rick's inspection was very orderly and comprehensive.*

I have reviewed this Inspection Report and do hereby APPROVE,
DISAPPROVE of the findings explained within.

Signature

Jeffrey L. Burgess

October 31, 1984

Reich Geo-Physical
1019 Arlington Drive
Billings, Montana 58101

Attention: Keith A. Reich, RSO

Re: Inspection of Radioactive
Material License No. 33-09909-01

Gentlemen:

Referenced is your letter, dated October 9, 1984, informing us of the steps you have taken to correct the items of apparent noncompliance which we brought to your attention in our letter dated October 5, 1984. Your letter informing us of the corrective action taken appears to be satisfactory. We will review these matters during our next inspection.

We appreciate your cooperation.

Sincerely,

Dana K. Mount, P.E.
Director, Division of
Environmental Engineering

DWM/SBC:VB

cc: Gene A. Christianson, Chief
Env. Health Section
Bill Delmore, Legal Counsel

October 5, 1984

This letter gives you the opportunity to advise us, in writing, of your position concerning the above. In particular, please inform us of any corrective steps you have taken or intend to take with respect to the above-mentioned items of apparent noncompliance and the date all corrective action was or will be completed. Your reply should be sent to us within twenty (20) days of the date of this letter to assure prompt attention in our further evaluation of this matter.

Sincerely,

Dana K. Mount, P.E.
Director, Division of
Environmental Engineering

DKM/SPC:pkm

Inspection Report
(Well Logging)

1. Licensee: Reich Geophysical
2. License Number(s): 33-09909-01
3. Type of Inspection: Unannounced
4. Date of Inspection: September 27, 1984
5. Inspected By: Stephen Charlton
Dale Patrick
6. Date of Last Inspection: June 23, 1982
7. Interviews:

<u>Name</u>	<u>Title</u>
Keith Reich	Owner, R.S.O.

8. Discussion with Licensee Following Inspection:

- A. Highest Level of Management Contacted for Exit Meeting: Keith Reich, Owner
- B. Discussion with:
 - 1) Member of Management
 - 2) Other
- C. Discussion of Findings of Previous Inspection: Yes. The items of non-compliance from previous inspection were discussed as appropriate through the investigation.
- D. Other Topics Discussed:
Items on this report.

9. Organization & Administration:

- A. Organizational structure as described in application
or letter dated _____, or _____ as below _____.
- B. Other: Keith Reich - owner, R.S.O.
Terry Dowling - trained user, works on
2nd unit as needed
- C. List primary licensee contact: Name Keith Reich
Phone (406) 252-9428
- D. Personnel: Only employees are K. Reich and T. Dowling

10. Training and Qualification of Personnel:

- A. Radioactive material users named in license:
Yes _____ No X
- B. Approved training program: Yes X No _____
Deficiencies noted: Yes _____ No X
K. Reich - Health Physics Service of Cali
C. Training provided by: _____ and 3 day Support Consultants Clas
T. DOWLING - SUPPORT CONSULTANTS CLASS
- D. Retraining: Yes X No _____
1) Frequency: approx. 5 yr. as appropriate to stay
abreast of regulations and technology changes.
2) By whom: ---
3) Scope: as needed
4) Retraining records reviewed: Yes _____ No X
- E. Instructions to workers per 33-10-10-01.2.:
Yes X No _____

11. Inspection and Maintenance:

A. Included in operating and emergency procedures:

Yes X No

B. Inspection and Maintenance Check: Yes X No

C. Six Month Frequency: Yes No X

D. Record of results: Yes No X

E. Describe inspection and maintenance program:

A visual inspection of logging tool, cables, etc. and survey of the tool with survey meter is performed daily.

12. Health Department Regulations and Licensee's Operating and Emergency Procedures:

A. Regulations and Operating and Emergency Procedures furnished to all users" Yes X No

1) Are Operating and Emergency procedures approved by the Department: Yes X No

B. Licensee maintains a utilization log: Yes X No

C. Utilization log contains all required information:
Yes X No

D. Licensee makes physical inventories: Yes X No

E. Inventories contain all required information:

Yes X No

F. Quarterly: Yes X No

G. Procedures in event a sealed source is lost downhole:

Adequate - If a disconnect occurs, routine fishing operations are undertaken. If complications then arise, this Department is contacted.

13. Uses of Materials, Facilities and Equipment:

A. Radioactive material inventory on: 8/4/84

<u>Quantity</u>	<u>Isotope</u>	<u>Source S/N</u>	<u>Storage Device</u>	<u>S/N</u>
<u>15.5 mCi</u>	<u>Am-241</u>	<u>B-351</u>	<u> </u>	<u> </u>
<u>25 mCi</u>	<u>Am-241</u>	<u>B-085</u>	<u> </u>	<u> </u>
<u>125 mCi</u>	<u>Cs-137</u>	<u>CSV-192</u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

1) Are procurement and use of radioactive materials in accordance with license requirements: Yes X No

B. Scope of program: Approximately 30-40 wells are logged
per month, when active.

C. Facility Description:

Sources are all stored in tools locked to brackets within company logging vans.

D. Survey Meters:

- 1) Calibrated and operable instruments available and used: Yes X No
- 2) Type and number available: One Ludlum Model 3
G-M meter
- 3) Is meter available for each jobsite/truck:
Yes X No
- 4) Calibrated by: R/A Services, Odessa, TX
- 5) Is calibration method authorized: Yes X No

6) Calibrated at 6 month intervals Yes X No

7) 0.1mR/hr through 20mR/hr can be measured:

Yes X No

8) Instrument calibration:

<u>Instrument No.</u>	<u>Last Calibration Date</u>
<u>11898 (Ludlum 3)</u>	<u>4-10-84</u>
<u>8074 (Ludlum 2)</u>	<u>4-10-84</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

14. Personnel Monitoring Control:

A. Film or TLD badge supplier ICN

B. Badge exchange frequency Monthly

C. Reports reviewed by K. Reich

D. Frequency of report review Monthly

E. Records reviewed for period 8/81 to 7/84

by inspector

F. Each individual is assigned film badge: Yes X No

G. Control badge: Yes X No

H. Unusual exposures or incidents (33-10-04-05.3. and 4.):

None - there was not a measureable exposure gained

by any personnel in the past 3 years.

15. Leak Tests:

- A. Leak test method approved: Yes ☒ No ☐
- B. Model of leak test kit: SIT-KIT (Suntrac Co.)
- C. Wipe performed by K. Reich, Suntrac Services, Webster
- D. Test at 6-month intervals: Yes ☐ No ☒
- E. Results of tests: Yes, all were <0.005 mCi
- F. Records reviewed for period 6-82 to 8-84

16. Surveys

- A. Area or facility survey conducted (33-10-04-03.1):
(of package upon receipt)
Yes ☐ No ☐ N/A - no packages received
- B. Area or facility survey recorded (33-10-04-04.1.b):
(of package upon receipt)
Yes ☐ No ☐ N/A
- C. Survey records reviewed for period 8/82 to 8/84
- D. Maximum radiation levels in unrestricted areas
(33-10-04-02.5.): <2 mR/hr
- E. Vehicle survey (33-10-04-03.1.): Yes ☒ No ☐
- F. Records of vehicle surveys (33-10-04-05.1.b.):
Yes ☒ No ☐

17. Posting and Labeling:

- A. CHRA posted: Yes ☐ No ☒
- B. CRA posted: Yes ☐ No ☒
- C. CRM posted: Yes ☒ No ☐
- D. In accordance with 33-10-04-03.3.: Yes ☒ No ☐
Area of source storage in van is posted with "Radioactive"
sign.

- A. Name and Title of Worker: None
- B. Is Adherence to Safety Procedures Adequate:
- C. Comments:

20. Independent Measurements:

- A. Instrument Victoreen Model 440 Ion Chamber
- B. Calibration date 5/8/85
- C. Describe measurements and results _____
 <1 mR/hr - surface of storage container
 <2 mR/hr - surface of logging tool
 Not detachable - Exterior of vehicle

21. Receiving and Shipping of Radioactive Materials:

- A. Procedures for picking up, receiving, and opening of packages (33-10-04-03.7.): Yes X No _____
- B. Written procedures: Yes _____ No X
- C. Shipping incidents since last inspection: Yes _____ No X
- D. Survey of package when received (33-10-04-03.7.c.(1)):
Yes _____ No _____ N/A - no pkg. received
- E. Record of survey of package (33-10-04-05.1.b.):
Yes _____ No _____ N/A
- F. Shipment of sources since last inspection: Yes _____ No X
- 1) Only shipping container authorized by the license have been used: Yes _____ No _____ N/A
- 2) Shipping papers and package labeling are properly completed: Yes _____ No _____ N/A
- 3) All radioactive material transferred as authorized (33-10-03-07.1.): Yes _____ No _____ N/A
- 4) Radioactive material transfer records are maintained (33-10-03-07.1.): Yes _____ No _____ N/A

22. Tracer Studies Conducted:

Yes _____ No X If yes, is survey meter
available at each jobsite/vehicle? Yes _____ No _____

Comment: _____

23. Inspection Summary:

A. Items of Noncompliance:

1. The survey meter was not calibrated between the dates 7/27/82 and 4/10/84. This exceeds the six-month calibration frequency required in your application for license dated March 1, 1983, and therefore, Condition 16. of the license.
2. An Americium-241 sealed source was not leak tested between 1/12/83 and 4/30/84. Since the source was used in logging activities during August and September 1983, it is apparent that the required six-month leak test frequency was exceeded.

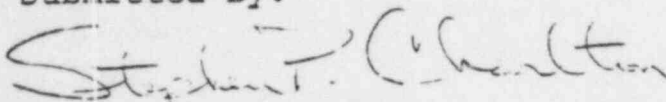
The six-month requirement may be exceeded if the source is in storage, but in this instance it should have been leak tested in July 1983. This is contrary to Condition 14. of your license.

B. Recommendations:

None

Date of Report: 9/27/84

Submitted By:

A handwritten signature in dark ink, appearing to read "Stephen P. Charlton". The signature is fluid and cursive, with the first name "Stephen" and last name "Charlton" clearly distinguishable.

Stephen P. Charlton
Environmental Scientist
Radiation Control Program

Review of Inspection Report (to be completed by supervisor) .

- A. Review by Whom: *Jeffrey L. Burgess*
- B. Title: *Manager Radiation Control Program*
- C. Date: *9-28-84*
- D. Did Reviewer Accompany the Inspector? *No*
- E. Comments: *Nil*

I have reviewed this Inspection Report and do hereby APPROVE DISAPPROVE of the findings explained within.

Signature

Jeffrey L. Burgess