

How Do REC's Slip Through the Cracks?

A study for the EBA RMC, June 22, 2011

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PARTNER
Engineering and Science, Inc.®

Quality Gurus








Study Failure!



Bank Bucket Analysis

SOURCE OF ERROR FROM LENDERS

-  Less than a Phase I ESA was ordered;
-  Legacy Loan--Purchase of Paper or Bank;
-  Waiver for Business Reasons;
-  Consultant Missed a REC;
-  REC developed after loan was made.



#1 Reason: Limited Scope DD

Bank Policy Required Less than a Phase I





#2 Legacy Loans

EBA Banks buying Non-EBA Banks

Less Stringent Environmental Policy

Other Reasons:

#3 Did the loan with knowledge of REC



#4 Consultant Mistakes



#5 New Issues



Informal Survey of Phase I Errors

- Essentially 1 question: What can cause a REC to be missed during the Phase I ESA process?
- 21 senior level (10+ years of experience) respondents from 5 companies



Survey Set Up

- **5 general “Buckets” of error**



Site Visit/Interview Errors



Historical Review Errors



Regulatory/Database Review Errors



Data Interpretation Errors



Other

- **23 scenarios within these categories**



Survey Data – High Level View

Where do the most Phase I errors occur?

#1: Historical Review

#2: Site Visit/Interview

#3: Data Interpretation

#4: Regulatory/Database Review

#5: Other



*Ranking based on weighted averages

Survey Data - Granular

Question: In your experience, which of these scenarios have you come across that caused a REC to be missed?

23 scenarios plus an “other” category.

Respondents assigned a relative "frequency" to that scenario (how common of an error).

| Answer Options | Never | Infrequently | Occasionally | Common | Very Common |
|---|-------|--------------|--------------|--------|-------------|
| Inadequate review of regulatory files (either did not request files, did not review them or did not review enough of them) | 0 | 4 | 8 | 5 | 4 |
| Data interpretation error: The key facts were found, but the EP wrote off the REC | 0 | 4 | 9 | 5 | 3 |
| Inspector didn't ask the right questions during the site visit/interview | 0 | 6 | 6 | 7 | 2 |
| Inadequate review of Sanborn Maps | 0 | 7 | 5 | 7 | 2 |
| During site visit: Inspector missed evidence of a REC due to lack of training | 1 | 7 | 5 | 8 | 0 |
| Inadequate review of city building permits | 1 | 7 | 7 | 4 | 2 |
| Inadequate review of city directories | 1 | 8 | 6 | 4 | 2 |
| Inadequate review of aerial photographs | 0 | 9 | 7 | 5 | 0 |
| Other (describe below). More room is available later for further description. | 3 | 0 | 2 | 0 | 1 |
| Misinterpretation of historical data | 1 | 7 | 9 | 4 | 0 |
| Inspector was lazy and did not adequately walk the site | 1 | 9 | 8 | 2 | 1 |
| Regulatory database report did contain the information, but the EP did not identify it (include instances where site was misplotted in the database and the EP did not verify/correct the location) | 2 | 8 | 7 | 4 | 0 |
| Inspector was lied to during the interview | 0 | 12 | 6 | 3 | 0 |
| EP did not check other local regulatory databases | 1 | 12 | 4 | 3 | 1 |
| Regulation or industry changes occurred such that an issue that was fairly not classified as a REC previously should now be classified as a REC | 2 | 9 | 7 | 2 | 1 |
| Inadequate review of unique local sources (oil and gas maps, historical society records) | 2 | 11 | 4 | 4 | 0 |
| Poor understanding of state/local regulations led to incorrectly classifying something as a non-REC | 6 | 4 | 7 | 3 | 1 |
| Regulatory database report did not contain the information needed to identify the REC | 3 | 8 | 7 | 2 | 0 |
| During site visit: Inspector was not given proper access and evidence of a REC was behind the proverbial "locked door" | 1 | 13 | 5 | 2 | 0 |
| During site visit: Visual obstructions (snow, vegetation, parked cars) prevented identification of REC | 1 | 13 | 6 | 1 | 0 |

| Answer Options | Never | Infrequently | Occasionally | Common | Very Common |
|---|-------|--------------|--------------|--------|-------------|
| Inadequate review of regulatory files (either did not request files, did not review them or did not review enough of them) | 0 | 4 | 8 | 5 | 4 |
| Data interpretation error: The key facts were found, but the EP wrote off the REC | 0 | 4 | 9 | 5 | 3 |
| Inspector didn't ask the right questions during the site visit/interview | 0 | 6 | 6 | 7 | 2 |
| Inadequate review of Sanborn Maps | 0 | 7 | 5 | 7 | 2 |
| During site visit: Inspector missed evidence of a REC lack of training | 1 | 7 | 5 | | |
| Inadequate review of city building permits | 1 | 7 | 7 | | |
| Inadequate review of city directories | 1 | 8 | 6 | | |
| Inadequate review of aerial photographs | 0 | 9 | 7 | | |
| Other (describe below). More room is available later in description. | 3 | | | | |
| Misinterpretation of historical data | 1 | | | 4 | 0 |
| Inspector was lazy and did not adequately walk the site | 1 | | | 2 | 1 |
| Regulatory database report did contain the information, but the EP did not identify it (include instances where site was misplotted in the database and the EP did not verify/correct the location) | 2 | | | 4 | 0 |
| Inspector was lied to during the interview | 0 | 12 | 6 | 3 | 0 |
| EP did not check other local regulatory databases | 1 | 12 | 4 | 3 | 1 |
| Regulation or industry changes occurred such that an issue that was fairly not classified as a REC previously should now be classified as a REC | 2 | 9 | 7 | 2 | 1 |
| Inadequate review of unique local sources (oil and gas maps, historical society records) | 2 | 11 | 4 | 4 | 0 |
| Poor understanding of state/local regulations led to incorrectly classifying something as a non-REC | 6 | 4 | 7 | 3 | 1 |
| Regulatory database report did not contain the information needed to identify the REC | 3 | 8 | 7 | 2 | 0 |
| During site visit: Inspector was not given proper access and evidence of a REC was behind the proverbial "locked door" | 1 | 13 | 5 | 2 | 0 |
| During site visit: Visual obstructions (snow, vegetation, parked cars, etc.) prevented identification of REC | 1 | 13 | 6 | 1 | 0 |

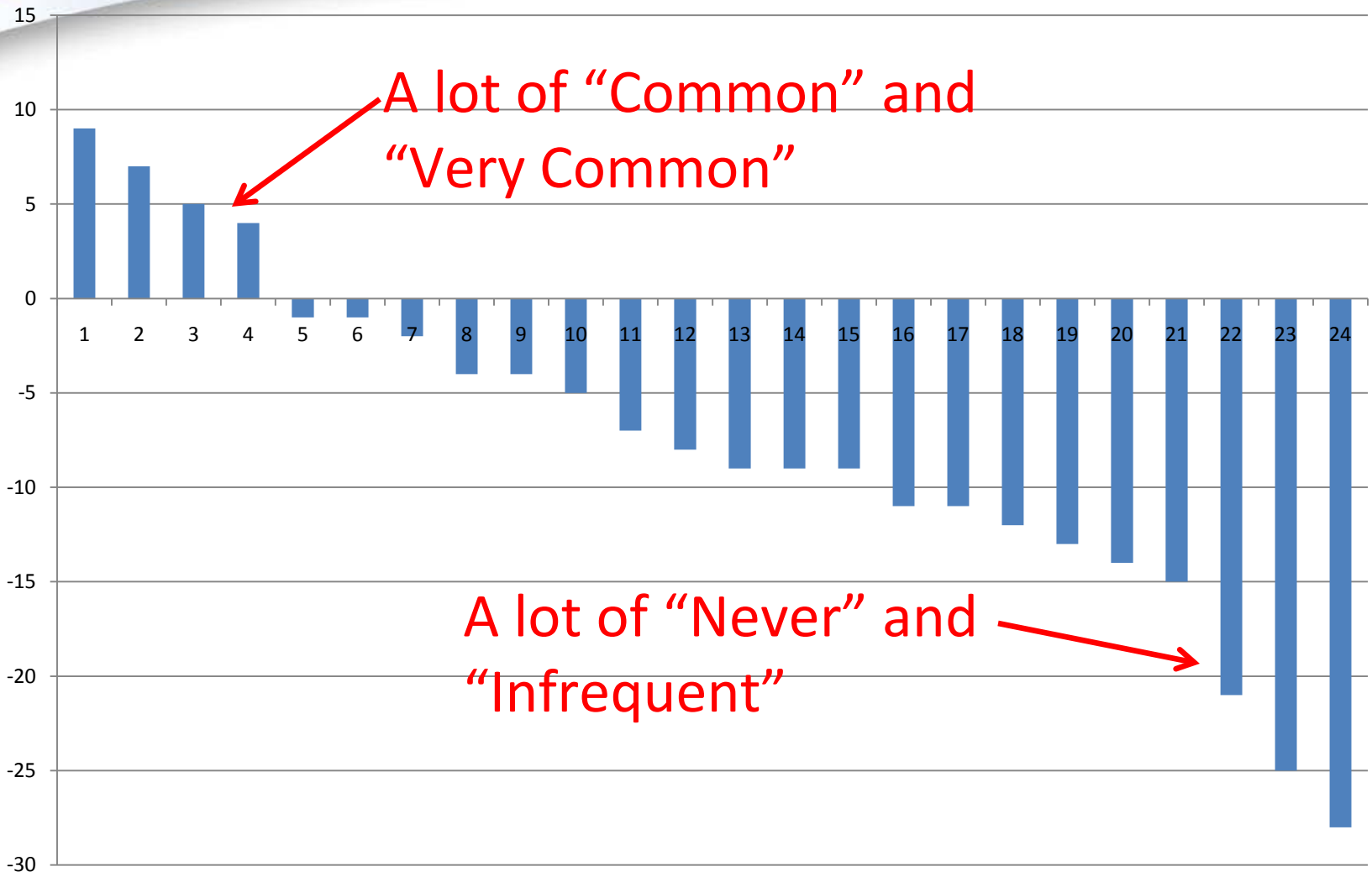
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-1

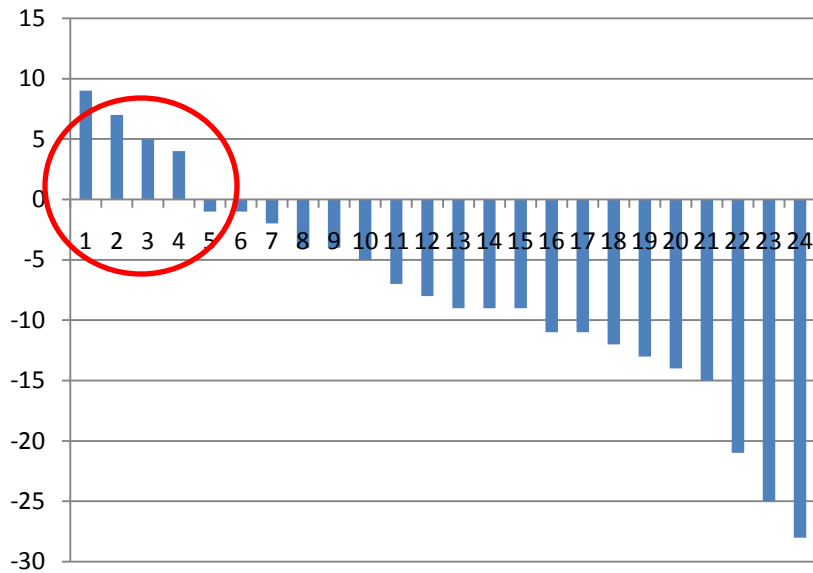
+1

+2

Sources of Error



Top 5 Sources of Errors



1. Inadequate file review
2. Risk interpretation
3. Inspector didn't ask the right questions
4. Sanborn Maps
5. Inspector missed it (training)

Middle Range

6. Building permits

7. City directories

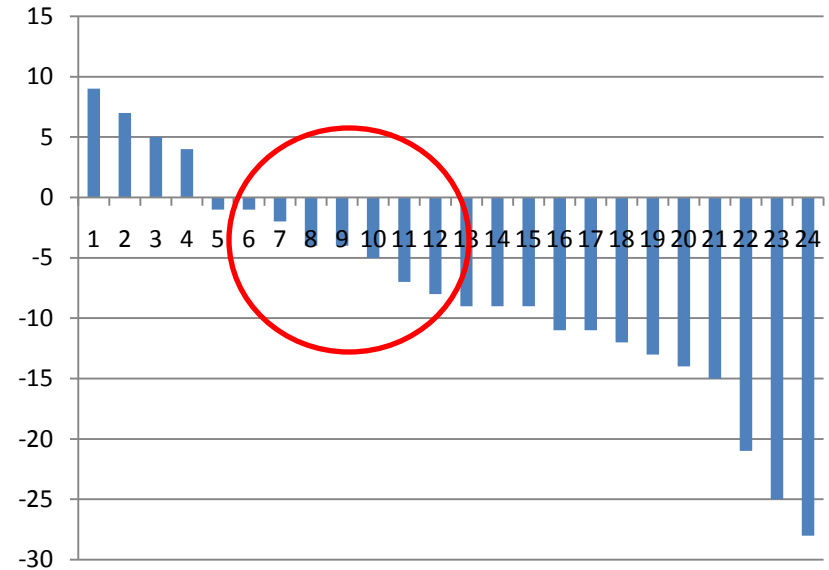
8. Aerial photographs

9. Misinterpretation of historical data

10. Inspector missed it (lazy)

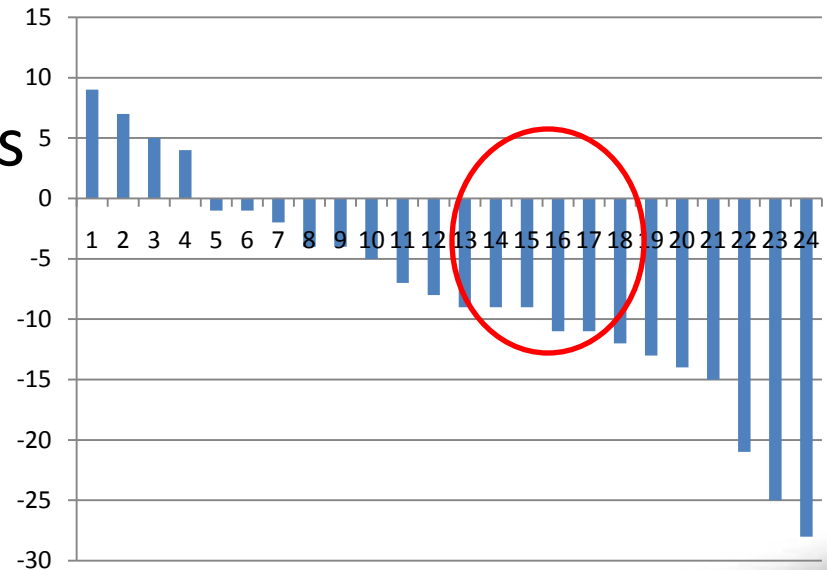
11. EP missed database info

12. Inspector was lied to

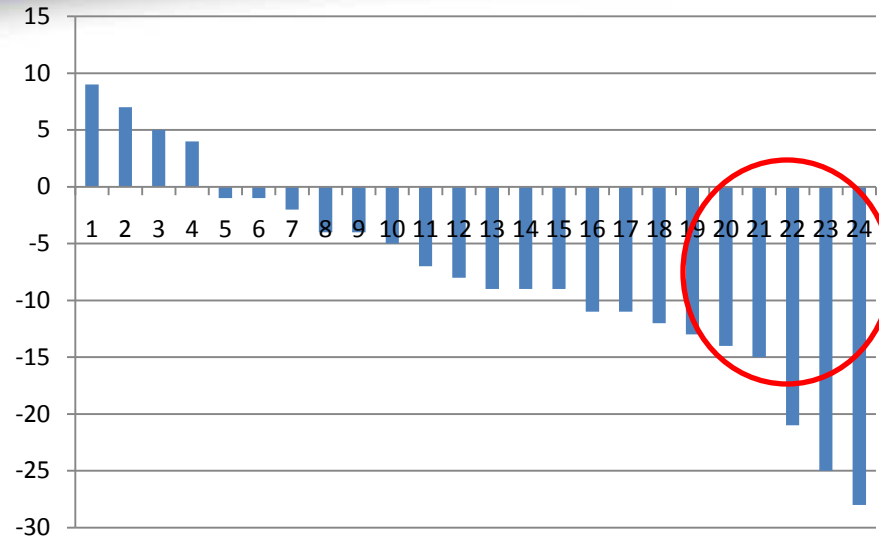


Middle Range cont.

13. Didn't check other local regulatory databases
14. Regulation / industry changes
15. Unique local sources
16. Poor understanding of regs
17. Database report missed it
18. Access issue



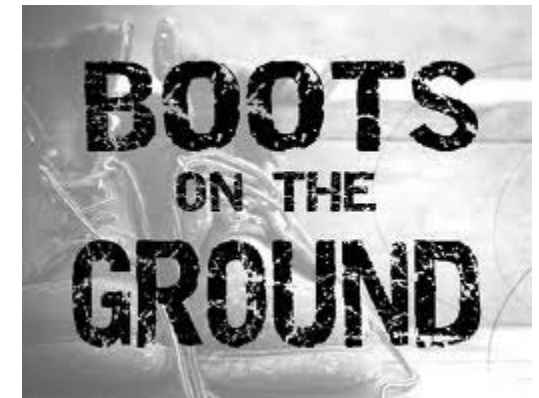
Bottom 5 Sources of Errors



19. Visual obstructions
20. Misplotted SP on the historicals
21. Topographic maps
22. Environmental liens
23. Filtered database report

Solution #1: EP Does Site Visit

| | |
|----------------------------|-------------------|
| Missed REC (Reason #5) | Experience Helps! |
| Proverbial “Locked Door” | Experience Helps! |
| Visual Obstructions | Experience Helps! |
| Lazy Inspector | Maybe 😊 |
| Poor Interview (Reason #4) | Experience Helps! |
| Site Contact Lied | Experience Helps! |



Solution #2: Client Support

| | |
|--|-----------------|
| Make borrower open proverbial “Locked Door” | We Need Support |
| 2 nd Site Visit to overcome Visual Obstructions | We Need Support |
| Agency Requires 3 Weeks and Charges \$180 for File Review | We Need Support |



Solution #3: File Review Part of Scope?

(REASON #1)



Solution #5: Risk Interpretation

Good Risk Management

Requires



Relationship + Judgment + Experience



Discussion? Questions?





Thank you!

Presented By:
Joseph P. Derhake, PE

Attachments



[Exit this survey](#)

SURVEY: Common Errors in Phase I ESAs

Survey Overview

The purpose of this survey is to identify what causes Recognized Environmental Conditions (RECs) to be missed during the Phase I Environmental Site Assessment (ESA) process. We recognize that there are times when errors are made that would have actually eliminated a REC, but for the purpose of this survey we're just looking for times when RECs "slipped through the cracks."

We're looking for your feedback based on your experiences - what you would "guestimate" are the most common errors that you have come across, either within your current firm, at a previous firm, or while reviewing an old report during a new Phase I ESA.

Let's begin!

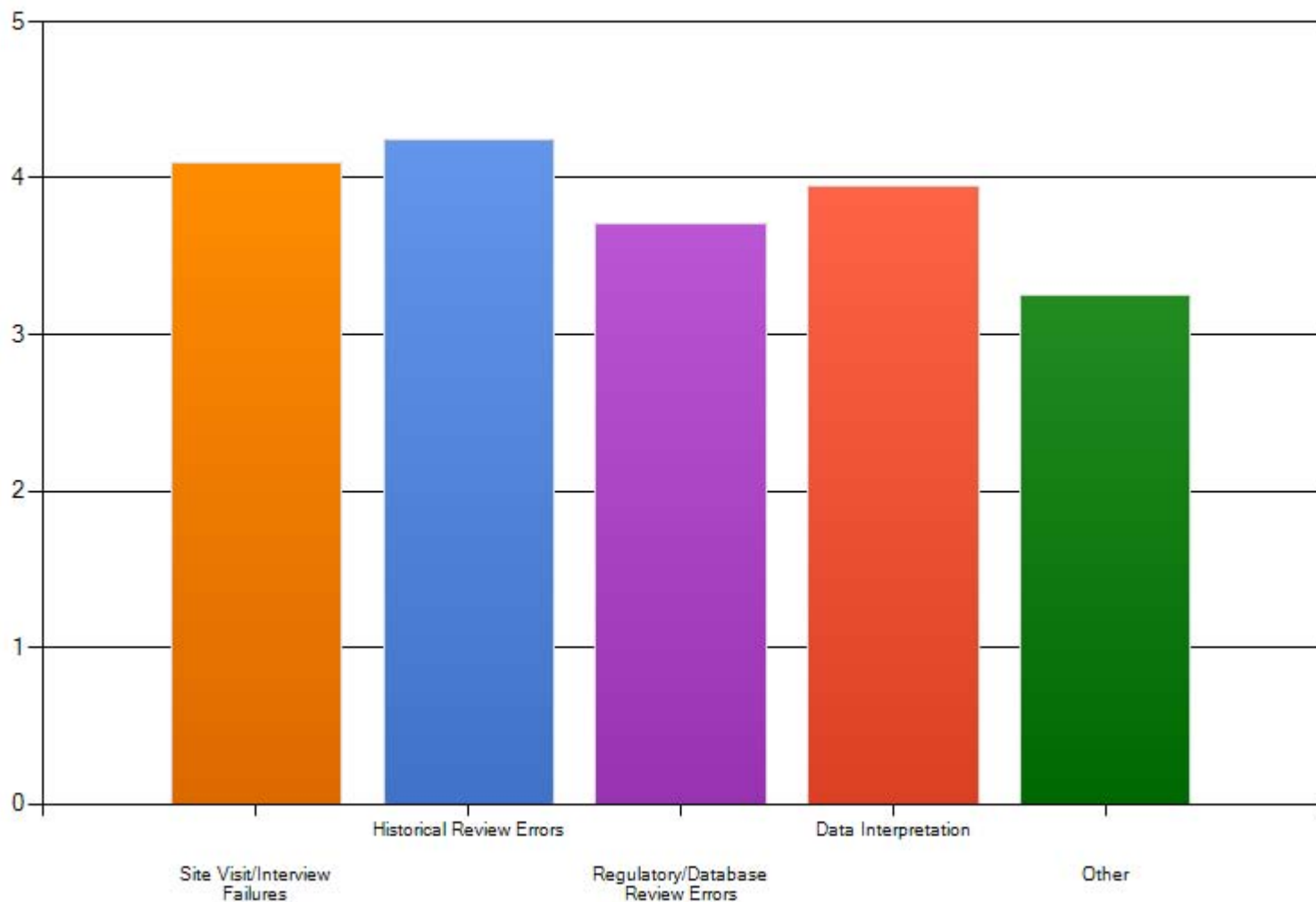
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Create your own [free online survey](#) now!

SURVEY: Common Errors in Phase I ESAs

In your estimation, what percentage of Phase I errors that caused a REC to be missed fall into each of the buckets below? Please assign a percentage to each category (total must equal 100%).

| Answer Options | 0% | 1-10% | 11-20% | 21-30% | 31-40% | 41-50% | 51-60% | 61-70% | 71-80% | 81-90% | 91-100% | Rating Average | Response Count | | | | | | | | | | | |
|-----------------------------------|----|-------|----------|---------------|----------|---------------|-----------|---------------|----------|---------------|---------|--------------------------|----------------|--------|---|-------|---|-------|---|-------|---|-------|------|----|
| Site Visit/Interview Failures | 0 | 0.00% | 5 | 23.80% | 4 | 19.00% | 4 | 19.00% | 3 | 14.30% | 2 | 9.50% | 3 | 14.30% | 0 | 0.00% | 0 | 0.00% | 0 | 0.00% | 0 | 0.00% | 4.10 | 21 |
| Historical Review Errors | 0 | 0.00% | 1 | 5.00% | 5 | 25.00% | 5 | 25.00% | 7 | 35.00% | 1 | 5.00% | 1 | 5.00% | 0 | 0.00% | 0 | 0.00% | 0 | 0.00% | 0 | 0.00% | 4.25 | 20 |
| Regulatory/Database Review Errors | 0 | 0.00% | 2 | 9.50% | 6 | 28.60% | 11 | 52.40% | 1 | 4.80% | 0 | 0.00% | 1 | 4.80% | 0 | 0.00% | 0 | 0.00% | 0 | 0.00% | 0 | 0.00% | 3.71 | 21 |
| Data Interpretation | 0 | 0.00% | 3 | 14.30% | 6 | 28.60% | 5 | 23.80% | 5 | 23.80% | 1 | 4.80% | 0 | 0.00% | 1 | 4.80% | 0 | 0.00% | 0 | 0.00% | 0 | 0.00% | 3.95 | 21 |
| Other | 0 | 0.00% | 3 | 37.50% | 3 | 37.50% | 0 | 0.00% | 1 | 12.50% | 1 | 12.50% | 0 | 0.00% | 0 | 0.00% | 0 | 0.00% | 0 | 0.00% | 0 | 0.00% | 3.25 | 8 |
| | | | | | | | | | | | | <i>answered question</i> | 21 | | | | | | | | | | | |
| | | | | | | | | | | | | <i>skipped question</i> | 0 | | | | | | | | | | | |

In your estimation, what percentage of Phase I errors that caused a REC to be missed fall into each of the buckets below? Please assign a percentage to each category (total must equal 100%).



SURVEY: Common Errors in Phase I ESAs

In your experience, which of these scenarios have you come across that caused a REC to be missed? Please assign a relative "frequency" to that scenario (how common of an error). If you have not come across a particular scenario, please check "Never." "Inadequate review" can entail not reviewing a source at all, not reviewing enough of it, or reviewing poor quality data (such as low resolution aeriels, or poor city directory data, etc).

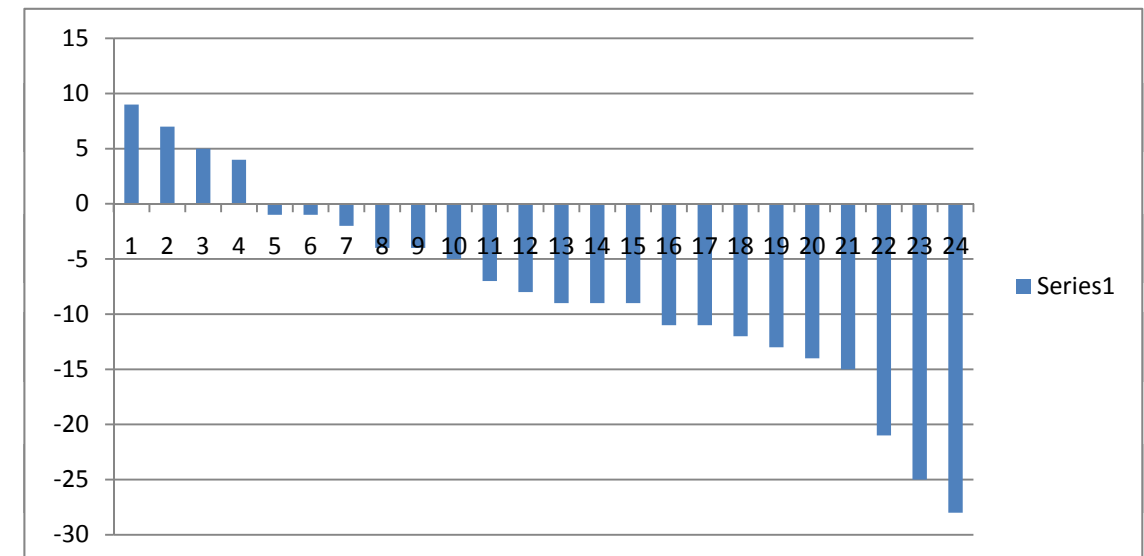
| Answer Options | Never | | Infrequently | | Occasionally | | Common | | Very Common | | Rating Average | Response Count |
|---|-------|--------|--------------|--------|--------------|--------|--------|--------|-------------|--------|--------------------------|----------------|
| During site visit: Inspector missed evidence of a REC due to lack of training | 1 | 4.80% | 7 | 33.30% | 5 | 23.80% | 8 | 38.10% | 0 | 0.00% | 2.95 | 21 |
| During site visit: Inspector was not given proper access and evidence of a REC was behind the proverbial "locked door" | 1 | 4.80% | 13 | 61.90% | 5 | 23.80% | 2 | 9.50% | 0 | 0.00% | 2.38 | 21 |
| During site visit: Visual obstructions (snow, vegetation, parked cars, etc) caused the inspector to miss evidence of a REC | 1 | 4.80% | 13 | 61.90% | 6 | 28.60% | 1 | 4.80% | 0 | 0.00% | 2.33 | 21 |
| Inspector was lazy and did not adequately walk the site | 1 | 4.80% | 9 | 42.90% | 8 | 38.10% | 2 | 9.50% | 1 | 4.80% | 2.67 | 21 |
| Inspector didn't ask the right questions during the site visit/interview | 0 | 0.00% | 6 | 28.60% | 6 | 28.60% | 7 | 33.70% | 2 | 9.50% | 3.24 | 21 |
| Inspector was lied to during the interview | 0 | 0.00% | 12 | 57.10% | 6 | 28.60% | 3 | 14.30% | 0 | 0.00% | 2.57 | 21 |
| Inadequate review of Sanborn Maps | 0 | 0.00% | 7 | 33.30% | 5 | 23.80% | 7 | 33.30% | 2 | 9.50% | 3.19 | 21 |
| Inadequate review of aerial photographs | 0 | 0.00% | 9 | 42.90% | 7 | 33.30% | 5 | 23.80% | 0 | 0.00% | 2.81 | 21 |
| Inadequate review of topographic maps | 7 | 33.30% | 9 | 42.90% | 4 | 19.00% | 0 | 0.00% | 1 | 4.80% | 2.00 | 21 |
| Inadequate review of city building permits | 1 | 4.80% | 7 | 33.30% | 7 | 33.30% | 4 | 19.00% | 2 | 9.50% | 2.95 | 21 |
| Inadequate review of city directories | 1 | 4.80% | 8 | 38.10% | 6 | 28.60% | 4 | 19.00% | 2 | 9.50% | 2.90 | 21 |
| Inadequate review of unique local sources (oil and gas maps, historical society records) | 2 | 9.50% | 11 | 52.40% | 4 | 19.00% | 4 | 19.00% | 0 | 0.00% | 2.48 | 21 |
| Inadequate review of environmental liens | 8 | 38.10% | 9 | 42.90% | 4 | 19.00% | 0 | 0.00% | 0 | 0.00% | 1.81 | 21 |
| The EP misplotted the subject property on the aeriels, sanborns or topos | 2 | 9.50% | 11 | 52.40% | 8 | 38.10% | 0 | 0.00% | 0 | 0.00% | 2.29 | 21 |
| Misinterpretation of historical data | 1 | 4.80% | 7 | 33.30% | 9 | 42.90% | 4 | 19.00% | 0 | 0.00% | 2.76 | 21 |
| Regulatory database report did not contain the information needed to identify the REC | 3 | 15.00% | 8 | 40.00% | 7 | 35.00% | 2 | 10.00% | 0 | 0.00% | 2.40 | 20 |
| Regulatory database report did contain the information, but the EP did not identify it (include instances where site was misplotted in the database and the | 2 | 9.50% | 8 | 38.10% | 7 | 33.30% | 4 | 19.00% | 0 | 0.00% | 2.62 | 21 |
| Regulatory database report was filtered and pertinent information was taken out | 10 | 47.60% | 9 | 42.90% | 1 | 4.80% | 1 | 4.80% | 0 | 0.00% | 1.67 | 21 |
| EP did not check other local regulatory databases | 1 | 4.80% | 12 | 57.10% | 4 | 19.00% | 3 | 14.30% | 1 | 4.80% | 2.57 | 21 |
| Inadequate review of regulatory files (either did not request files, did not review them or did not review enough of them) | 0 | 0.00% | 4 | 19.00% | 8 | 38.10% | 5 | 23.80% | 4 | 19.00% | 3.43 | 21 |
| Poor understanding of state/local regulations led to incorrectly classifying something as a non-REC | 6 | 28.60% | 4 | 19.00% | 7 | 33.30% | 3 | 14.30% | 1 | 4.80% | 2.48 | 21 |
| Data interpretation error: The key facts were found, but the EP wrote off the REC | 0 | 0.00% | 4 | 19.00% | 9 | 42.90% | 5 | 23.80% | 3 | 14.30% | 3.33 | 21 |
| Regulation or industry changes occurred such that an issue that was fairly not classified as a REC previously should now be classified as a REC | 2 | 9.50% | 9 | 42.90% | 7 | 33.30% | 2 | 9.50% | 1 | 4.80% | 2.57 | 21 |
| Other (describe below). More room is available later for further description. | 3 | 50.00% | 0 | 0.00% | 2 | 33.30% | 0 | 0.00% | 1 | 16.70% | 2.33 | 6 |
| Other (please specify) | | | | | | | | | | | | 2 |
| | | | | | | | | | | | <i>answered question</i> | 21 |
| | | | | | | | | | | | <i>skipped question</i> | 0 |

SURVEY: Common Errors in Phase I ESAs

In your experience, which of these scenarios have you come across that caused a REC to be missed? Please assign a relative "frequency" to that scenario (how common of an error). If you have not come across a particular scenario, please check "Never." "Inadequate review" can entail not reviewing a source at all, not reviewing enough of it, or reviewing poor quality data (such as low resolution aerals, or poor city directory data, etc).

****Sorted by Rating Averages****

| Answer Options | Never | | Infrequently | | Occasionally | | Common | | Very Common | | Rating Average | Response Count | |
|---|-----------|---------------|--------------|---------------|--------------|---------------|----------|---------------|-------------|--------|----------------|----------------|-----|
| Inadequate review of regulatory files (either did not request files, Data interpretation error: The key facts were found, but the EP Inspector didn't ask the right questions during the site | 0 | 0.00% | 4 | 19.00% | 8 | 38.10% | 5 | 23.80% | 4 | 19.00% | 3.43 | 21 | 9 |
| Inadequate review of Sanborn Maps | 0 | 0.00% | 7 | 33.30% | 5 | 23.80% | 7 | 33.30% | 2 | 9.50% | 3.19 | 21 | 4 |
| During site visit: Inspector missed evidence of a REC due to lack | 1 | 4.80% | 7 | 33.30% | 5 | 23.80% | 8 | 38.10% | 0 | 0.00% | 2.95 | 21 | -1 |
| Inadequate review of city building permits | 1 | 4.80% | 7 | 33.30% | 7 | 33.30% | 4 | 19.00% | 2 | 9.50% | 2.95 | 21 | -1 |
| Inadequate review of city directories | 1 | 4.80% | 8 | 38.10% | 6 | 28.60% | 4 | 19.00% | 2 | 9.50% | 2.90 | 21 | -2 |
| Inadequate review of aerial photographs | 0 | 0.00% | 9 | 42.90% | 7 | 33.30% | 5 | 23.80% | 0 | 0.00% | 2.81 | 21 | -4 |
| Other (describe below). More room is available later for further | 3 | 50.00% | 0 | 0.00% | 2 | 33.30% | 0 | 0.00% | 1 | 16.70% | 2.33 | 6 | -4 |
| Misinterpretation of historical data | 1 | 4.80% | 7 | 33.30% | 9 | 42.90% | 4 | 19.00% | 0 | 0.00% | 2.76 | 21 | -5 |
| Inspector was lazy and did not adequately walk the site | 1 | 4.80% | 9 | 42.90% | 8 | 38.10% | 2 | 9.50% | 1 | 4.80% | 2.67 | 21 | -7 |
| Regulatory database report did contain the information, but the Inspector was lied to during the interview | 2 | 9.50% | 8 | 38.10% | 7 | 33.30% | 4 | 19.00% | 0 | 0.00% | 2.62 | 21 | -8 |
| EP did not check other local regulatory databases | 0 | 0.00% | 12 | 57.10% | 6 | 28.60% | 3 | 14.30% | 0 | 0.00% | 2.57 | 21 | -9 |
| Regulation or industry changes occurred such that an issue that was fairly not classified as a REC previously should now be classified as a REC | 1 | 4.80% | 12 | 57.10% | 4 | 19.00% | 3 | 14.30% | 1 | 4.80% | 2.57 | 21 | -9 |
| Regulation or industry changes occurred such that an issue that was fairly not classified as a REC previously should now be classified as a REC | 2 | 9.50% | 9 | 42.90% | 7 | 33.30% | 2 | 9.50% | 1 | 4.80% | 2.57 | 21 | -9 |
| Inadequate review of unique local sources (oil and gas maps, Poor understanding of state/local regulations led to incorrectly | 2 | 9.50% | 11 | 52.40% | 4 | 19.00% | 4 | 19.00% | 0 | 0.00% | 2.48 | 21 | -11 |
| Regulatory database report did not contain the information | 6 | 28.60% | 4 | 19.00% | 7 | 33.30% | 3 | 14.30% | 1 | 4.80% | 2.48 | 21 | -11 |
| Regulatory database report did not contain the information | 3 | 15.00% | 8 | 40.00% | 7 | 35.00% | 2 | 10.00% | 0 | 0.00% | 2.40 | 20 | -12 |
| During site visit: Inspector was not given proper access and | 1 | 4.80% | 13 | 61.90% | 5 | 23.80% | 2 | 9.50% | 0 | 0.00% | 2.38 | 21 | -13 |
| During site visit: Visual obstructions (snow, vegetation, parked | 1 | 4.80% | 13 | 61.90% | 6 | 28.60% | 1 | 4.80% | 0 | 0.00% | 2.33 | 21 | -14 |
| The EP misplotted the subject property on the aerals, sanborns | 2 | 9.50% | 11 | 52.40% | 8 | 38.10% | 0 | 0.00% | 0 | 0.00% | 2.29 | 21 | -15 |
| Inadequate review of topographic maps | 7 | 33.30% | 9 | 42.90% | 4 | 19.00% | 0 | 0.00% | 1 | 4.80% | 2.00 | 21 | -21 |
| Inadequate review of environmental liens | 8 | 38.10% | 9 | 42.90% | 4 | 19.00% | 0 | 0.00% | 0 | 0.00% | 1.81 | 21 | -25 |
| Regulatory database report was filtered and pertinent information | 10 | 47.60% | 9 | 42.90% | 1 | 4.80% | 1 | 4.80% | 0 | 0.00% | 1.67 | 21 | -28 |



In your experience, which of these scenarios have you come across that caused a REC to be missed? Please assign a relative "frequency" to that scenario (how common of an error). If you have not come across a particular scenario, please check "Never." "Inadequate review" can entail not reviewing a source at all, not reviewing enough of it, or reviewing poor quality data (such as low resolution aerials, or poor city directory data, etc).

