

## ***Preparation of an Innocent Owner/Operator Program Site Investigation Report***

The Innocent Owner/Operator Program (IOP) Site Investigation Report (SIR) should document with site-specific information that contamination on the applicant's property has 1) originated from an off-site source **and** 2) did not originate from site activities on the property. This demonstration should be supported by both a Phase I Environmental Assessment of the applicant's property to initially identify any potential on-site sources of contamination and a SIR including, at a minimum, the information outlined in this guidance document. As described in detail in this guidance, the report should contain a description of soil and groundwater analytical data demonstrating an off-site source of contamination and similar data that eliminates potential on-site sources as contributors to the contamination. In addition to soil and groundwater data, historical knowledge about on-site and off-site commercial/industrial activities that may have resulted in the contamination should be highlighted. The full nature and extent of contamination on-site does not need to be determined to make an innocent owner demonstration; however, sufficient information should be provided to clearly support an off-site origin for the contamination and rule out potential on-site sources.

The Texas Commission on Environmental Quality (TCEQ) envisions situations where both on-site contamination and off-site sourced contamination may be present on a property desiring a IOP certificate. The TCEQ approach to evaluating a situation of this type is to determine if the contamination is divisible either by media or contaminant type. For example, if contamination from fuels is identified in the soils, contamination of solvent is identified in the groundwater, and the analytical data and site history suggests an off-site source for the solvents contamination, then an IOP certificate could be issued for the solvent contamination. In this instance, the contamination is divisible by both contaminant type and media. If fuels were also in the groundwater, an IOP certificate could still be issued for the solvent because the contamination is still divisible by contaminant type. However, if instead of solvents contamination in the groundwater there is only fuels contamination in the groundwater, again with fuels contamination in the soil, the TCEQ would not be able to definitively determine that the source of the contamination was solely from an off-site source; therefore, the IOP certificate could not be issued because the contamination is not divisible.

A suggested table of contents and checklist are attached as Tables 2-1 and 2-2. The checklist includes the essential elements of the IOP Investigation Report. The table of contents and checklist are guidance and should be modified as appropriate to fit site-specific considerations; however, the essential elements of the checklist should be included in the report. A brief explanation of the contents of each section of the report that is addressed in detail in the SIR Checklist (Table 2-2) is presented below.

### **Executive Summary**

The SIR should include an executive summary which is a concise overview of the report. It should summarize the key data that suggests contamination originated from an off-site source and did not originate from the applicant's property.

## **Introduction and Background**

This section should include an overview of the purpose of the report and describe any events pertinent to the innocent owner demonstration leading up to the investigation. This section should include maps and figures that show the location of site structures and other key site features, and relationships to adjacent properties that may have contributed to on-site contamination. In addition, a summary of historical and current business operations of the property and off-site neighbors should be provided with an emphasis upon possible on-site or off-site sources that may have contributed to contamination on the property. On-site business operation can either be summarized from the Phase I or reference made to an attached Phase I document. This section should also include a summary of on-site areas identified during the Phase I where samples were collected to evaluate the possible contribution of on-site sources to the contamination on the property. The information about on-site and off-site business operations should be used to support the selection of chemical analyses, sampling locations, and sampling intervals and frequency.

## **Objectives of Investigation Activities**

The goals of the investigation activities should be discussed in this section. In general, the goals are to identify the extent of contamination with sufficient detail to demonstrate that contamination on the property has resulted from an off-site source and demonstrate that contamination did not occur from an on-site source. In addition, objectives should include a comparison to the appropriate health-based levels to determine the appropriate institutional or other controls that may be necessary to be protect human health and the environment and meet data Quality Assurance/Quality Control (QA/QC) requirements.

## **Scope of Investigation Activities**

This section of the report should focus on the rationale for sampling activities to support the IOP demonstration. The discussion should include the basis for the location, frequency of samples collected and the types of analyses performed. Beware that the IOP certificate will be contaminant specific; therefore, the broadest range of analyses should be considered when assessing if contamination is present. In particular, this section should describe how the sampling scheme met the investigation objectives (i.e., collecting samples of groundwater at the upgradient property edge to illustrate that the highest levels of contamination point to an off-site source). Sample collection points should be clearly presented on maps, cross-sections, and boring logs. Sampling, decontamination, and QA/QC methods should be discussed in the appropriate section of the appendix.

## **Site Investigation Results**

The report should include a thorough discussion of geologic and chemical data collected from all media during the site investigation. Data should be presented in tabular and/or in graphical form as appropriate. Whenever possible, cross-sections and maps should be used to illustrate the spatial relationship of the analytical results to the subsurface geology and hydrogeology and off-site properties. Maps and cross-sections illustrating the distribution of analytical data are critical for the TCEQ to confirm that the person is an innocent owner/operator. Tables and maps should be located together in the back of the report for easy access, as opposed to being distributed throughout the text. Field notes, soil borings and well installation logs and laboratory analytical reports, should be included in the appendices.

The relationship of potential on-site and off-site contaminant source areas to contamination, the vertical and horizontal extent of contamination in all affected media in relation to the suspected sources and property boundary should be presented and thoroughly discussed in this section. If contaminant levels are highest at the property boundary and decrease toward the center of the property, this will most clearly illustrate an off-site source of contamination. It is not necessary to specifically identify the off-site source of contamination, although if an obvious or likely source is identified, this will enhance the claim that the contamination originated off-site.

Although the investigation data collected by the applicant is not intended to be used to make a cleanup decision, it will be necessary for the applicant to determine the appropriate institutional controls that may be necessary to protect human health and the environment. In order to evaluate proposals for the use of institutional or other controls, a comparison to the cleanup criteria for Risk Reduction Standard 2 should be performed. If the groundwater meets the definition of drinking water and contaminants are present at levels exceeding the cleanup levels for drinking water, then a restriction on its use will be necessary.

### **Investigation Summary and Conclusions**

This section should include a summary of the data demonstrating the contamination originated from an off-site source and did not occur as a result of on-site sources. To facilitate review, conclusions can be presented in bullet form.

### **Appendices**

#### **Appendix A            Sampling Methods, Decontamination Methods and Quality Assurance Procedures**

This Appendix should include a discussion of how samples were collected, how sampling devices were decontaminated between sample locations, and results from quality assurance samples. Duplicate samples should be collected for quality assurance purposes on every media investigated when laboratory or field screening sample are collected (e.g., soil, groundwater, etc). These samples should be analyzed for the same analytes as the original samples and should be collected at a rate not less than one per sampling event and not less than one per 20 samples. If volatile analyses of water samples are performed, trip blanks and field blanks should be part of the sampling program. Trip blanks should be supplied by the laboratory at a rate of one sample per sampling event. Field blanks that are actually poured in the field, should be collected at a rate of not less than one per sampling event and not less than one per 20 samples. Trip blanks and field blanks should reside in the same coolers as other samples collected for volatile analyses. Trip blanks should be submitted to the laboratory at the end of the sampling event. Results from quality assurance samples should be discussed in detail and conclusions should be drawn about the validity of the data. Failure to collect, evaluate and report QA/QC data could invalidate the data and require that additional samples be collected.

#### **Appendix B            Soil Boring and Well Installation Logs**

This Appendix should include a log of each boring/well that was drilled and completed during site investigation activities. Boring logs should include a complete description of the materials encountered during drilling, field OVA readings and any pertinent information that may identify contamination. This could include laboratory analytical results. When wells are installed, a description of well installation parameters and the description of the materials encountered during drilling should be presented on the same log so well completion depths can be evaluated.

**Table 2-1**  
**Innocent Owner/Operator Program Site Investigation Report**  
**Table of Contents**

**Executive Summary**

<b>1.0</b>	<b>Introduction</b>
	1.1 Site Background
	1.1.1 Site Location and History
	1.1.2 Site Documentation
	1.1.3 Off-Site Documentation
<b>2.0</b>	<b>Objectives of Investigation Activities</b>
<b>3.0</b>	<b>Scope of Investigation Activities</b>
<b>4.0</b>	<b>Site Investigation Results</b>
	4.1 Site Stratigraphy and Hydrogeology
	4.2 Demonstration Contamination Originated Off-Site
	4.3 Demonstration Contamination Did Not Originate from On-Site Sources
	4.4 Health Risks associated with Analytical Results and Proposal for Appropriate Institutional or other Controls
<b>5.0</b>	<b>Investigation Summary and Conclusions</b>

**Tables and Figures**

Tabular Summary of Analytical Results  
Maps and Figures

**Appendices**

- A - Sampling Methods, Decontamination Methods and Quality Assurance Procedures
- B - Soil Boring and Well Installation Logs
- C - Field Notes
- D - Supporting Laboratory Analytical Data and Custody Forms
- E - Supporting Information about Site History
- F - Site Photographs

***Innocent Owner Site Investigation Report  
Checklist***

**Executive Summary**

- 1.0 Introduction**
- 1.1 Site Background
  - 1.1.1 Site and adjacent Property Description
    - \_\_\_A Facility name and address
    - \_\_\_B Facility description
    - \_\_\_C Current and proposed future land use including adjacent property to the extent known
    - \_\_\_D Site map depicting the property lines, building and road outlines, surrounding properties with emphasis on potential off-site sources of contamination, surface water bodies, water supply wells located within ½ mile, utility rights of way
  - 1.1.2 Site Documentation
    - \_\_\_A Summary of historical and current business operations with an emphasis upon possible contaminant sources (i.e. chemical storage areas, above and below ground tanks, loading/unloading areas, waste treatment, storage or disposal areas)
    - \_\_\_B Summary of type of contaminants potentially present onsite based on historic and current business operations
    - \_\_\_C Chronological list of previous reports for the applicant property relating to any potential onsite source of contamination (e.g. Phase I Environmental Site Assessments)
    - \_\_\_D Summary and conclusions from other reports for on-site property that could impact the innocent owner demonstration
    - \_\_\_E Provide copies of any TCEQ letters addressing contamination for on-site property
  - 1.1.3 Off-Site Documentation
    - \_\_\_A Summary of known off-site historical and current business operations with an emphasis upon possible contaminant sources, to the extent known

**Table 2-2**  
**Site Investigation Report**  
**Checklist (continued)**

- \_\_\_B Summary of types of contaminants that may be present based on known off-site historical and current business operations
- \_\_\_C Chronological list of previous reports for the off-site properties (if available and pertinent to innocent owner demonstration)
- \_\_\_D Summary and conclusions of other reports for off-site properties that impact the innocent owner demonstration. If available, information in TCEQ files that supports the innocent owner demonstration should be included (e.g. adjacent LPST information, results from inspections, etc.)
- \_\_\_E Provide copies of any TCEQ letters addressing contamination for the off-site adjacent properties

**2.0 Objectives of Assessment Activities**

- \_\_\_A Gather sufficient data to demonstrate contamination has migrated onto the applicant property from off-site sources and has not occurred from on-site activities
- \_\_\_B Identify and list potential on-site source areas
- \_\_\_C Identify potential off-site source areas if known
- \_\_\_D Identify chemicals of concern from on-site and potential off-site source areas
- \_\_\_E Identify affected media and determine if the health-based levels are exceeded in order to evaluate appropriate institutional or other controls
- \_\_\_F A qualitative assessment of the potential for human or environmental exposure based on current site conditions
- \_\_\_G Statement of quality assurance goals for sampling activities including appropriate detection limits

**3.0 Scope of Investigation Activities**

- \_\_\_A Type and rationale for analytical testing based on nature and location of suspected source of contaminants
- \_\_\_B Rationale for sampling scheme including sample/boring/well locations, sampling screening, sample intervals and frequency
- \_\_\_C Map illustrating sample/boring/well locations

**Table 2-2**  
**Site Investigation Report**  
**Checklist (continued)**

- 4.0 Site Assessment Results**
- 4.1 Site Stratigraphy and Hydrogeology
- \_\_\_A Discuss regional geology and hydrogeology including depth to regional aquifers when groundwater contamination is present
- \_\_\_B Discuss site specific geology and hydrogeology including information about the upper-most water bearing zone, in particular the groundwater flow direction
- \_\_\_C Identify the upper-most water bearing zone as drinking water or non-drinking water based on current TCEQ definitions in the Risk Reduction or Petroleum Storage Tank Rules
- \_\_\_D Illustrate geology and hydrogeology with appropriate cross-sections and potentiometric maps
- \_\_\_E Illustrate relationship to surface water bodies
- 4.2 Demonstration Contamination Originated Off-Site
- \_\_\_A Discuss, compare and illustrate soil and groundwater contamination data in the context of an off-site source of contamination. Present data in tables, cross-sections and/or maps
- 4.3 Demonstration Contamination did not Originate from On-Site Sources
- \_\_\_A Discuss, compare and illustrate soil and groundwater data in the context of potential or known on-site sources, if applicable. Present data in tables, cross-sections and/or maps
- 4.4 Health Risks Associated with Analytical Results and Necessary Institutional or Engineering Controls
- \_\_\_A Identify precalculated cleanup levels if available for contaminants identified
- \_\_\_B Determine if site exposure matches assumptions of pre-calculated cleanup levels
- \_\_\_C Background Assessment (If necessary, generally only for metals)

**Table 2-2**  
**Site Investigation Report**  
**Checklist (continued)**

- \_\_\_C1 Identify background levels for chemicals of concern (background is generally a value representative of naturally occurring levels but may be a man-made level that is representative of area-wide contamination {e.g., lead in soil due to use of leaded gasoline in automobiles})
- \_\_\_C2 Prepare data summary tables and data distribution cross-sections/maps comparing analytical results to background data (generally only for inorganics)
- \_\_\_C3 Describe statistical method used (e.g., tolerance interval) list of statistical parameters, (e.g., K and t values)
- \_\_\_C4 Determine if a contaminant release has occurred
- \_\_\_D Comparison of Analytical Results to Health Based Levels
- Soil Contamination (if necessary)
- \_\_\_D1 Discuss, compare, and illustrate contamination data in the context of pre-calculated cleanup levels and other appropriate cleanup criteria. Present data in tables, cross sections and/or maps
- \_\_\_D2 Discuss potential exposure to affected soil and propose the appropriate institutional or other controls
- \_\_\_D3 Propose the appropriate institutional or other controls that are necessary to protect public health
- Groundwater Contamination
- \_\_\_D4 Discuss, compare and illustrate contamination data in the context of precalculated cleanup and other appropriate cleanup criteria. Present data in tables and contaminant distribution maps as appropriate
- \_\_\_D5 Discuss potential exposure to affected groundwater or likelihood contamination may migrate to deeper currently unaffected groundwater zones
- \_\_\_D6 Propose the appropriate institutional or other controls that are necessary to protect public health



**Table 2-2**  
**Site Investigation Report**  
**Checklist (continued)**

- 6.0 Investigation Summary and Conclusions**
- \_\_\_A Summarize key data demonstrating an off-site source of contamination and that contamination is not from on-site sources
  - \_\_\_B Summarize the extent of contamination in appropriate media and note any analytical results that exceed levels protective of human health and the environment
  - \_\_\_C Summarize qualitative risks to human health and the environment
  - \_\_\_D Summarize appropriate institutional controls or engineering controls that are necessary to address the risk posed by the contamination

**Tables and Figures**

- Tabular Summary of Analytical Results
- \_\_\_A Tabular presentation of cleanup levels
- \_\_\_B Data highlighted that exceeds background and/or pre-calculated cleanup levels
- Maps and Figures
- \_\_\_A Cross-sections include correlated lithologic data and illustrate depth and spatial relationship of analytical results and sample locations
- \_\_\_B Cross-sections include monitor well screened interval, elevation of first encountered and static groundwater
- \_\_\_C Groundwater flow direction and contaminant migration pathways noted on maps

**Appendices**

- A Sampling Methods, Decontamination Methods and Quality Assurance Procedures
- \_\_\_ A Description of soil boring and well installation methods
- \_\_\_ B Description of sampling methods

**Table 2-2**  
**Site Investigation Report**  
**Checklist (continued)**

___ C	Discuss results of rinsate samples, field blanks, duplicate samples and other QA/QC samples
___ D	Discuss results from quality assurance samples in terms of precision, accuracy, completeness, representativeness and comparability
B	Soil Boring and Well Installation Logs
___A	Complete description of lithology encountered
___B	Screening readings noted on boring log with sample description
___C	First encountered and static water noted on boring well installation log
C	Field Notes
D	Supporting Laboratory Analytical Data and Custody Forms
E	Supporting Information about Site History
F	Site Photographs
___A	Include map illustrating location and direction of photographs