

Title: Probable Source(s) Determination	No: SOP 4.1	Page 1 of 6
	Revision 1	
Effective Date: 3/15/2013	Next Revision Date 3/15/2015	

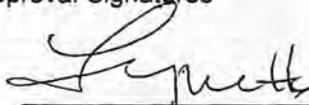
New Mexico Environment Department  
Surface Water Quality Bureau

Standard Operating Procedure (SOP)

for

## PROBABLE SOURCE(S) DETERMINATION

Approval Signatures

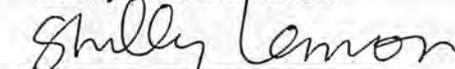
Lynette Guevara  
Subject Matter Expert

4/3/13  
Date



Jodey Kougioulis  
Quality Assurance Officer

4/3/13  
Date



Shelly Lemon  
Acting Program Manager

4-3-2013

Date

### 1.0 Purpose and Scope

The purpose of this document is to describe the order and process of 1) developing a qualitative evaluation of probable sources of impairment based on visual observations made by professionals in the field and input from the public; 2) reviewing these evaluations through both internal and public processes; and 3) incorporating this information into Total Maximum Daily Loads (TMDLs) and the Clean Water Act (CWA) §303d/§305b Integrated List (i.e., Appendix A of the Integrated Report). This approach, as detailed in Table 1, is intended only to provide a qualitative list of probable sources

### 2.0 Responsibilities

Bureau personnel who conduct watershed surveys or work with watershed groups in developing watershed based plans (WBPs) as well as those who supervise these individuals are responsible for implementing this procedure.

### 3.0 Background and Precautions

USEPA through listing guidance documents requires states to include a list of probable sources for each impairment. According to the 1998 305(b) report guidance, "... states must always provide aggregate source category totals..." in the biennial submittal that fulfills CWA §305(b)(1)(C) through (E) (USEPA 1997). The 2006 Integrated Report guidance states that all states must submit to USEPA a description of the nature and extent of nonpoint source pollution, as well as state-level summaries of causes and sources of impairment to waters (USEPA 2005). The term "probable" to describe sources is specifically noted in Appendix A of the 2006 Integrated

Title: Probable Source(s) Determination	No: SOP 4.1	Page 2 of 6
	Revision 1	
Effective Date: 3/15/2013	Next Revision Date 3/15/2015	

Report Guidance (USEPA 2005). New Mexico's Integrated List includes both cause(s) of impairment and probable source(s) of impairment.

There are usually multiple probable sources listed for any given cause in an impaired water body or assessment unit (AU). This is because the probable sources list is intended to include any and all activities that are known to occur within the impaired assessment unit, and have the potential to contribute to the identified cause of impairment. It is not intended to single out any particular land owner or land management activity, and has therefore been labeled "probable." Probable sources listed for any particular AU have not been verified to be the only sources of the identified impairment and all probable sources may not be listed.

Probable source information is currently housed in SWQB's Surface water Quality Information Database (SQUID). NMED developed this database in part to manage information regarding surface water impairment and to generate the Integrated List and associated statistics. USEPA has a standard list of probable sources with definitions that they would prefer states utilize to compile compatible source information from all states in order to generate national statistics (see Attachment 1). More specific information on probable sources of impairment is often provided in individual watershed planning documents (i.e., TMDLs, WBPs, etc.) as they are prepared to address individual causes of impairment by AU.

#### 4.0 Definitions

*Probable* - Supported by evidence strong enough to establish presumption but not proof

*Cause(s) of Impairment* - Parameters or constituents that cause non-attainment of designated or existing uses (USEPA 1997).

*Probable Source(s) of Impairment* - Activities that may contribute pollutants or stressors to a water body (USEPA 1997).

#### 5.0 Equipment

None

#### 6.0 Probable Source Determination (Process Description)

The overall order and approach for identifying probable sources of impairment (Table 1) is as follows:

- Probable Source/Site Condition Class Field Forms will be filled out during rotational watershed surveys and watershed restoration activities by SWQB staff.
- A Public Probable Source Survey is utilized to solicit public input, and is available to submit online (<http://www.nmenv.state.nm.us/swqb/PS/>), as well as at public meetings.
- During development of the biennial draft Integrated List, any newly identified cause(s) of impairment will be assigned a probable source of "Source Unknown" as a starting point.
- Probable sources noted on the most recent Probable Source/Site Condition Class Field Forms, as well as common sources for the particular pollutant, will be used to generate a draft probable source list in subsequent TMDL planning documents. These draft probable source lists will be finalized with watershed group/stakeholder input during the TMDL public meeting and associated comment period.
- The final probable source list in the TMDL will be used to update the subsequent Integrated List.

##### 6.1 Completion of Probable Source(s) & Site Condition Class Field Form

Project Coordinator(s) should fill out a *Probable Source(s) & Site Condition Class Field Form (Field Form)* for each AU in the survey after reconnaissance during the 1st or 2nd site visit. The

Title: Probable Source(s) Determination	No: SOP 4.1	Page 3 of 6
	Revision 1	
Effective Date: 3/15/2013	Next Revision Date 3/15/2015	

forms should be reviewed and revised by the survey lead(s) at the end of the survey. Finally, all survey forms should be reviewed by Watershed Protection staff with knowledge of the particular watershed as a QA measure. This review may include soliciting input from watershed groups as appropriate. The completed forms will be placed in the administrative record upon completion of the survey. Copies will also be placed in the appropriate survey binder along with all other pertinent survey forms.

Completion of the *Field Form* is based on a qualitative visual analysis combined with knowledge of land management activities in the contributing watershed that have the potential to negatively impact water quality. The goal of this qualitative evaluation is to determine the potential for a particular land management activity to impact water quality at the station where water quality data are being collected. As such, the evaluation only considers those activities within the AU upstream of the station. The evaluation uses a qualitative rating based on proximity (distance from site – e.g., at site, within 1 km or within the AU) or intensity (low, moderate, high). See the legend provided on the *Field Form* for details on scoring. GIS land use coverage or satellite imagery may be used to supplement or confirm staff observation in the field.

### 6.2 Incorporation of Probable Source lists into TMDLs and the 303d/305b Integrated List

During development of the Integrated List, any newly identified cause of impairment will be assigned a probable source of “Source Unknown.” Existing causes of impairment that were confirmed during a given survey will retain their probable source list as a starting point.

The probable source(s) of impairment will be improved upon during the TMDL process. Probable source(s) identified on all *Field Forms* found in the administrative record will be reviewed and used as a starting point for the development of a draft list of the probable sources of impairment in the TMDL. If multiple *Field Forms* exist for an AU, the most recent survey will be emphasized in development of a draft list. Probable Sources that scored either a (3) or a (5) for the impaired AU will be included unless those sources identified on the *Field Forms* are reasonably expected not to contribute to a specific impairment (e.g. stream channel incision for an *E. coli* impairment). In addition, common sources for the particular pollutant not identified on the *Field Forms* but known to occur within the AU may be added to the draft probable source list at the discretion of the TMDL writer or based on other staff/public input. Public input of probable source received either before the TMDL or during the TMDL process will be reviewed and incorporated as appropriate. Public input may be field verified if necessary to confirm. The draft probable source lists will be finalized with public as well as targeted watershed group/stakeholder input during the TMDL public comment period and meeting.

Following WQCC and EPA approval of the TMDL, the final probable source lists in the TMDL will be used to update the subsequent Integrated List. The TMDL writer will notify the Assessment Coordinator of any changes to the final probable source lists as TMDLs are approved.

### 6.3 Public Comment and Input

The opportunity for public comment and input on probable source(s) of impairment is provided at multiple times during the process of collecting water quality data, performing water quality assessment, and writing TMDLs. These opportunities are described in Figure 1 below and include but are not limited to the following:

- Public comment at watershed survey meetings, TMDL public meeting or at any time through the SWQB website (<http://www.nmenv.state.nm.us/swqb/PS/>),
- Public comment on probable sources listed in TMDL planning documents, or
- Public comment on probable sources listed in the Integrated List.

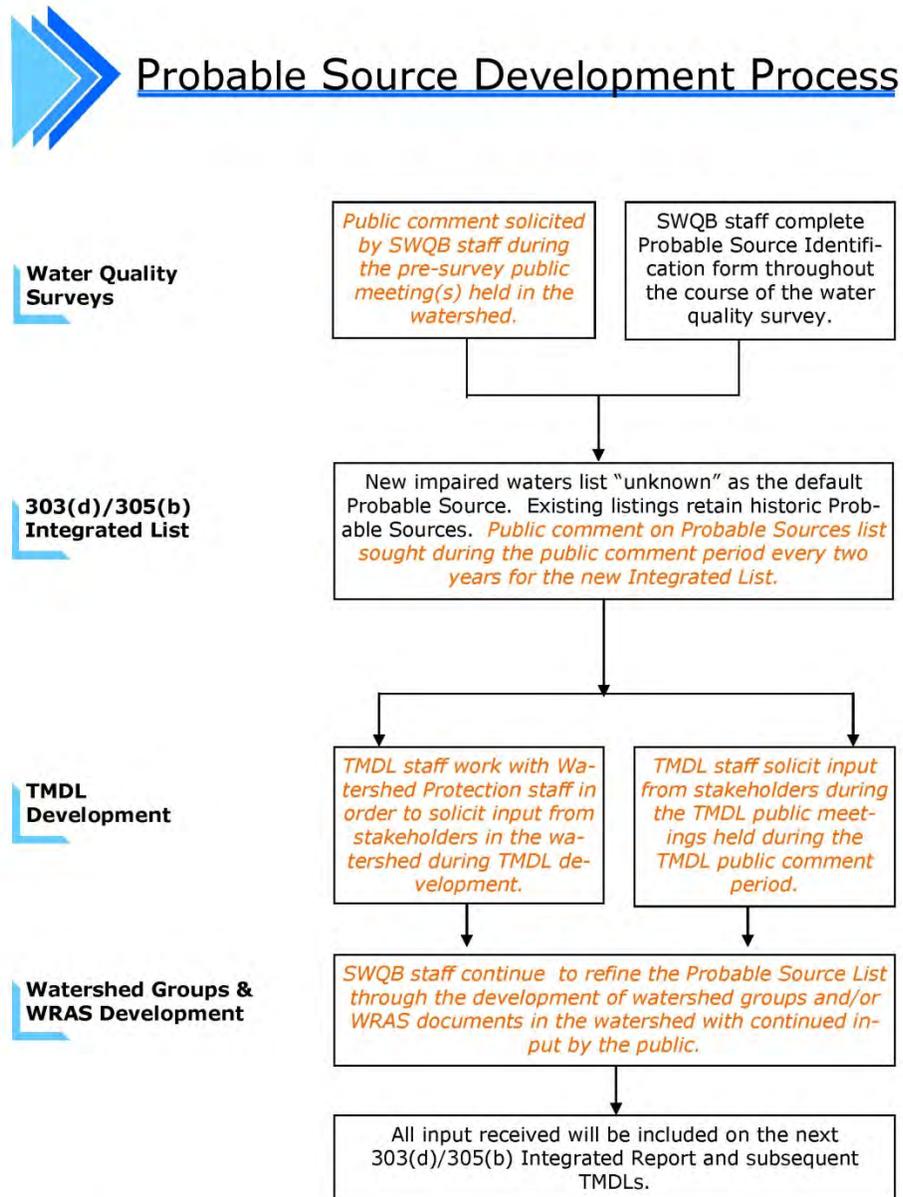
Title: Probable Source(s) Determination	No: SOP 4.1	Page 4 of 6
	Revision 1	
Effective Date: 3/15/2013	Next Revision Date 3/15/2015	

**Table 1.** Individual steps in the development of probable source(s) of impairment

<b>STEPS</b>	<b>REPOSIBLE PARTY</b>	<b>WHERE HOUSED</b>
<b><u>ROTATIONAL WATERSHED SURVEY:</u></b> Provide public with Probable Source survey form at pre-survey public meetings and make survey form available on-line	MASS Project Coordinator (s) and TMDL lead	Copy in survey binder initially, original in the Administrative Record by AU
<b><u>IN FIELD:</u></b> Fill out Probable Source/Site Condition Class Field Forms during rotational watershed surveys	MASS Project Coordinator (s) and review by WPS staff	Copy in survey binder, original in the Administrative Record by AU
<b><u>LISTING PROCESS:</u></b> Note new impairment listings on Integrated List as “Source Unknown”; retain previous on confirmed impairments.	Assessment Coordinator	in-house SQUID database
<b><u>TMDL PROCESS:</u></b> Generate draft Probable Source List and Linkages section in the TMDL using Probable Source/Site Condition Class Field Forms as well as common sources per pollutant(s)	TMDL lead	Draft TMDL
<b><u>TMDL PROCESS:</u></b> Finalize draft Probable Source List and Linkages section with watershed group input	WPS staff and TMDL lead	Draft TMDL
<b><u>TMDL PROCESS:</u></b> Finalize Probable Source List and Linkages section with input from public meetings	TMDL lead	Final TMDL
<b><u>WPS WBP PROCESS:</u></b> Fill out Probable Source/Site Condition Class Field Forms during watershed restoration planning or field work; provide watershed group with Probable Source survey forms and make survey form available on-line	WPS project lead	Administrative Record by AU
<b><u>LISTING PROCESS:</u></b> Update probable source list for impairments with final TMDL source lists for upcoming listing cycle. If no TMDL in place, continue to note as “Source Unknown” or retain previous list for confirmed impairments.	Assessment Coordinator	in-house SQUID database

MASS – Monitoring, Assessment, and Standards Section; TMDL – Total Maximum Daily Load; AU – assessment unit; WPS – Watershed Protection Section; WBP – Watershed Based Plan

**Figure 1. Probable Source Development Process and Public Participation Flowchart**



Title: Probable Source(s) Determination	No: SOP 4.1	Page 6 of 6
	Revision 1	
Effective Date: 3/15/2013	Next Revision Date 3/15/2015	

## 7.0 Quality Assurance / Quality Control Activities

As described above, all *Probable Source(s) & Site Condition Class Field Forms*, which are completed by watershed Project Coordinator(s) are reviewed by Watershed Protection staff that are knowledgeable about the watershed(s) in question. In addition, the public participation process for both TMDLs and the Integrated List provides opportunities for review and comment by stakeholders, including entities and individuals living and working in particular watersheds who provide specific information regarding probable sources of impairment that may have not been identified by SWQB.

## 8.0 Forms

- Attachment #1 - USEPA List of Probable Sources
- Public Probable Source Survey
- Probable Source(s) & Site Condition Class Field Form

## 9.0 Revision History

Revision 1 – March 2013 – The word “probable” was dropped from the phrase “probable cause” because there are quantitative procedures (i.e., SWQB’s Assessment Protocols) to determine causes of impairment. All referenced to the Assessment Database (ADB) were changed to the Surface water Quality Information Database (SQUID), which is a result of a database merger. Public Probable Source Survey form was updated to better match the scoring in the staff form.

## 10.0 References

USEPA. 1997. Guidelines for preparation of the comprehensive state water quality assessments (305(b) reports) and electronic uptakes. EPA-841-B-97-002A. Washington, D.C.

USEPA. 2005 Guidance for 2006 assessment, listing and reporting requirements pursuant to sections 303(d), 305(b), and 314 of the Clean Water Act. Watershed Branch, Assessment and Watershed Protection Division, Office of Wetlands, Oceans, and Watersheds. Washington, D.C.