

**DRA DATA REQUEST  
DRA-SCG-041-DAO  
SOCALGAS 2012 GRC – A.10-12-006  
SOCALGAS RESPONSE**

**DATE RECEIVED: FEBRUARY 10, 2011  
DATE RESPONDED: FEBRUARY 28, 2011**

**Exhibit Reference:** SCG-5, Engineering

**Subject:** DIMP-Driven Activities, Sewer Lateral Inspection Program

**Please provide the following:**

1. SoCalGas states on pages RKS-46 and RKS-47, "...the concern with cross bores has only become an industry-wide focus since the late 2000s. At that point, SoCalGas revised its Gas Standard (installation policy) to ensure that cross-bore situations would not occur prospectively." Please provide the following with regard to this statement:
  - a. A copy of the referenced Gas Standard.
  - b. The number of cross bores identified and/or reported each year from 2005-2010.
  - c. The annual amount spent to identify and mitigate this problem and the tracking account(s) used, each year from 2005-2010.

**SoCalGas Response:**

- a. Attached is a copy of the referenced Gas Standard **184.0170**, *Trenchless Construction Methods* referenced on pages RKS-46 and RKS-47. The sections highlighted in yellow (1.2 and 4.10.3) are the specific sections being referenced.



184.0170

- b. Historically, the number of cross-bores was identified and/or reported via our Claims department. The additional SLIP-identified locations are included in the 2010 data. The total identified cross bore locations requiring mitigation from 2005 – 2010 is 104.

<b>Year</b>	<b>Number of Cross Bores Identified through Claims Data</b>	<b>Number of Cross Bores Identified through SLIP Program</b>
2005	16	n/a
2006	10	n/a
2007	15	n/a
2008	13	n/a
2009	15	n/a
2010	10	25
<b>TOTAL</b>	<b>79</b>	<b>25</b>

- c. The Sewer Lateral Inspection Program (SLIP) began in late July 2010. Therefore, there is no historical (2005 – 2009) data to present. The 2010 expense data are not yet finalized and will be available in the future.

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2. Please provide a copy of the Southwest Gas investigatory report referenced by SoCalGas on page RKS-47. If SoCalGas' forecast is based in any way on this report, please provide citations to this report and explain how the information, data, and/or conclusions contained in this report were used to form SoCalGas' forecast.

**SoCalGas Response:**

The SWG work referenced by SoCalGas on page RKS-47 refers to a presentation that SWG delivered at an American Gas Association (AGA) meeting, a copy of which is attached. SWG provided the frequency with which it was finding sewer conflicts during their sewer lateral inspection program.



Southwest Gas SLIP  
Update AGA safety si

The estimate for the total number of records to review at SoCalGas was determined by querying Service History files that date back to 1994. This review revealed the following number of gas main/service installations that used cut and bore construction methods:

**Estimated Number of Potential Sewer Conflicts at SoCalGas**

<b>Pipe Size</b>	<b>Feet (x 1000)</b>	<b>Miles of Pipe</b>	<b>Potential Sewer Conflicts</b>	<b>Number of Services</b>
1"-2" main	3,925	743	74	65,416
3" main	404	77	8	6,739
Services under 3"	6,455	1,223	122	107,580
3" service	36	7	1	599
Sub-Total	10,820	2,049	205	180,334
<b>Installed Since 1970</b>	<b>21,640</b>	<b>4,098</b>	<b>410</b>	<b>360,668</b>

SoCalGas assumed a sewer lateral conflict would be found every 10 miles or 0.1 conflicts per mile. This number was based on information presented by SWG, which found conflicts at a rate of approximately 0.07 conflicts per mile for the Central Arizona area. The terrain in Southern California has more hills which tend to have shallower sewer mains and services increasing the potential for conflicts. Thus the 0.07 rate was increased to 0.1 to account for local conditions in Southern California

The data presented covers the period since 1994. However, SoCalGas started using trenchless construction methods to install PE pipe in the early 1970's. Therefore, the Sub-Total amount in the table above was doubled to estimate the number of services installed using trenchless construction methods since 1970.

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3. SoCalGas states on page RKS-47 that the number of potential situations SoCalGas forecasts and will pursue is 410. Please explain how this number was determined and provide a copy of all calculations and or supportive documents used to determine this number.

**SoCalGas Response:**

Please see the discussion presented in the response to Question 2 above.

Attached are the actual SLIP investigation numbers for July 2010 – January 2011. Based upon the length of main and services surveyed in 2010, and, the number of conflicts found (25) SoCalGas is on pace to exceed the original estimate of 410 cross bores.

<b>Location (Region)</b>	<b>Number of Service History Records Reviewed</b>	<b>Laterals Cleared By Records Review and Field Inspections</b>	<b>Laterals Cleared By Camera Inspections</b>	<b>Number of Conflicts Found and Repaired</b>
<b>Total</b>	<b>4,275</b>	<b>1,706</b>	<b>1,653</b>	<b>25</b>

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4. Please explain and provide a copy of SoCalGas' operating procedures for sewer lateral inspection and mitigation before DIMP.

**SoCalGas Response:**

Prior to DIMP (and continued today) SoCalGas' Gas Standard **184.0170**, *Trenchless Construction Methods* states that all sewer laterals must be located and marked when using trenchless construction methods. This Gas Standard is attached to the response to Question No. 1 of this data request response.

Prior to DIMP SoCalGas did not have a formal sewer lateral inspection and mitigation program. The mitigation of the sewer laterals found prior to this DIMP-driven program, as stated in the response to Question No. 1b, were repaired as a routine Field Operations activity as SoCalGas identified them.

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5. Please explain and provide a copy of SoCalGas' operating procedures for sewer lateral inspection and mitigation as a result of DIMP.

**SoCalGas Response:**

As a result of DIMP, SoCalGas implemented a Sewer Lateral Inspection Program (SLIP) to examine trenchless main and service installations to identify potential cross-bore areas. The purpose of the SLIP is to address this gas facility and sewer lateral conflict issue by:

- a. Developing a communication plan to educate plumbing contractors, equipment rental companies and municipalities.
- b. Establishing a high-priority records review and locate-and-mark response process, when necessary, for plumbers.
- c. Performing an extensive records review to identify locations where:
  - i. Plastic gas lines were installed by trenchless technologies, and
  - ii. Sewer cross-bores are not an issue.
- d. Performing on-site inspections to clear potential facility conflicts<sup>1</sup>.
- e. Documenting the results of all record reviews and physical inspections.
- f. Updating Company practices and documentation to reflect new processes



Implementation Plan  
for Sewer Lateral Insj

Another action implemented as a result of DIMP was an information bulletin that was published and sent to distribution field supervisors, field personnel and contractors on 12/7/09. The bulletin's purpose was to reinforce to Company crews and our pipeline contractor crews the requirement of Gas Standard **184.0170** *Trenchless Construction Methods* to adequately locate, mark out, and expose/excavate to ensure no-conflict installations before using any trenchless technologies.



Info-0928

Finally, Section 2.1.14 of Gas Standard **192.0020**, *Preparation of Completion Sketch* was added to provide a means of recording sewer lateral verification and avoidance where trenchless construction methods are used to install main and/or service. Please see the yellow highlighted section, on page 3 of 12, in the attached Gas Standard.



Gas Standard  
192.0020

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<sup>1</sup> A field inspection may be able to determine whether the backfill indicates a trench or a bore installation, which could be a method to clear an entire job without a detailed home-by-home video inspection. If a former backfill process cannot be determined, the field inspections could include locate & mark, depth checks, and a complete video of the customer's sewer lateral to ensure that the gas facilities are not in conflict with the sewer lateral.

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6. Please explain (a) how each of the work activities identified in the Estimated Cost of Sewer Lateral Program at SoCalGas table on page 62 of the workpapers are carried out, (b) how SoCalGas determined the total cost and number of units for each work activity, (c) how SoCalGas determined the number of services that will be affected for Field Locating and Video Inspection, and (d) how the number of potential physical conflicts, 0.1% per mile, was determined. Include a copy of all calculations and/or documents used to support SoCalGas' estimates.

**SoCalGas Response:**

- a. The records review work activities are conducted by internal labor or contract planning resources. Planner tasks include providing support for SLIP Field personnel and performing the in-office service and main clearing process. Some details of these tasks are more fully detailed below:

***Support for SLIP Field Personnel***

SLIP Field personnel are responsible for the field inspection of mains and services (i.e., locate and mark, visual identification, backfill determination etc.). In order to perform these inspections, information specific to the main segments and services must be obtained from municipal sewer records and Region Technical Services:

- Determine the addresses of all of the services and parcels that are along the targeted main segment.
- Print list of affected address from SLIP database.
- Print atlas sheet(s) that contain the targeted main segment.
- Print service history of the services that are along the targeted main segment.
- Print municipal sewer map(s) that contain the targeted main segment
- Assist with miscellaneous planning related activities

***In-Office Service and Main Clearing Process***

Not all mains and services require field inspections when determining whether or not a sewer conflict exists. The SLIP team has an in-office clearing process for mains and services. This process requires Planners to review mains and services on atlas sheets one at a time and identify those that can be cleared via the in-office process. They are also required to list all of those services that require another process (i.e., physical inspections, etc.) in order to be cleared. Duties include:

- Review all mains and services on an atlas sheet and obtaining all information necessary to determine if they can be cleared by the in-office process
- Update SLIP database with all cleared services and mains.

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**Response to Question 6 (Continued)**

- Generate list of mains and services on the atlas sheet that cannot be cleared via the in-office process.
- Process is repeated until all atlas sheets in a given Region have been reviewed.

The field locating activities are conducted by the SLIP Field Inspector or locate-and-mark personnel at the Region level. The activities include verifying the location of the gas facilities and the sewer lateral using the sewer maps provided by the Cities and Company records. The location of the gas facilities must be verified to be more than 18” away from the sewer lateral in order to be “cleared” by field locating.

The video inspection field activities are performed when services or main cannot be “cleared” in the office or by field locating. The video inspection methods include an in-line sewer camera (Closed Circuit Television - CCTV) or a manual push camera to establish visual video evidence that there are no gas facilities in conflict. The CCTV pipeline technology is one of the most versatile, accurate, and least disruptive inspection methods, because it can be used to determine whether a gas facility was bored through a sewer lateral without impacting the customer. The CCTV is used to visually verify that there is no conflict present by sending a camera through the main sewer line and subsequently into the associated sewer lateral using a pan and tilt camera. It can also be used to locate the sewer lateral and the depth.

To resolve any conflicts that are found, the customer’s sewer lateral must be repaired and where necessary Company facilities are altered around the sewer.

Finally, the communication strategy which is part of the Public Awareness Program is intended to proactively communicate with affected audiences to educate them on the possibility that natural gas pipelines may have penetrated sewer lines, and to help prevent damage to the pipeline when attempting to clear a clogged sewer line. The communications team has launched a coordinated, outreach and communications campaign that will continue until all suspect areas are inspected and cleared.

The objectives of the communications strategy are:

- Increase awareness of potential risk and what to do if risk is suspected.
- Mitigate risk of injury or incident among target audiences.
- Increase message coordination among internal communication groups as well as within the various applicable safety messages.
- Reinforce our commitment to service and safety.

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**Response to Question 6 (Continued)**

b. The total cost was determined as follows:

	<b>Cost (\$millions)</b>	<b>Units</b>	<b>Comments</b>
<b>Records Review</b> (\$50/customer)	\$18.05	361,000	# Sewer services in program. (\$50 x 361,000 = \$18,050,000)
<b>Field Locating</b> (\$100/inspection)	\$11.9	119,000	33% of server services (\$100 x 119,000 = \$11,900,000)
<b>Video Inspection</b> (\$200/inspection)	\$5.00	25,000	7% of sewer services (361,000 x 0.07 x \$200 = \$5,000,000)
<b>Resolve Conflict</b> (\$2000/conflict)	\$0.82	410	# Potential conflicts at 0.1 per mile (410 x \$2,000 = \$820,000)
<b>Communications Program</b>	\$0.16	--	Additional expenses to communicate with customers/plumbers on SLIP
<b>Total</b>	\$35.930		

The records review estimate takes into account the cost of the workforce manually reviewing the records and the fact that they will need to review multiple records from 1970 – 1994, prior to CMS being implemented to find the trenchless technology jobs.

The field locating is an estimate to locate and mark the SoCalGas facilities and the cost to locate the sewer lateral.

The video inspection cost is an estimate of the average plumbers cost to send a video camera down a lateral and locate the sewer lateral in case a conflict exists.

The cost to resolve the conflict was based on the average cost to repair the sewer lateral and to alter the Company facilities.

- c. The number of services for field locating and video inspections were estimated based on historical figures provided by SWG. As shown in the table in Question No. 3, since the inception of SLIP, SoCalGas has found it necessary to clear approximately 38% by video inspection which is much higher than the original estimate of 7%.
- d. Please see the discussion presented in the response to Question No. 2.



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7. Please explain how the non-labor costs were determined for 2012. Provide a copy of all calculations and documents used to support SoCalGas' forecast. Please include a copy of the contract between SoCalGas and the local plumbing contractors referenced on page 62 of the workpapers.

**SoCalGas Response:**

The non-labor costs were calculated based on the contract costs of performing the field inspections and supplementing the internal workforce for the records reviews and field inspectors. The total cost for SLIP is estimated to be \$35.93 million dollars. SoCalGas estimated a cost per year of \$7.186 million, however there is a ramp up for 2010 and 2011 to get all the workforce and contractors on board.

The costs for the sewer contractor to perform camera inspections on the sewer laterals can range anywhere from \$2,500 to \$3,500 per day. Attached are the contracts secured for the three contractors that are presently performing the field inspections: Advanced Sewer Technologies (AST), Pro-Pipe, and California Locating Services.

**These contracts are provided to DRA under Section 583 of the California Public Utilities Code and CPUC General Order 66-C.**

**DOCUMENTS REMOVED DUE TO CONFIDENTIALITY**

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8. Please explain in detail how SoCalGas determined that it will need 4 project managers for this program in 2012, as stated on page 62 of the workpapers. Include a copy of all calculations and/or documents used to support this forecast.

**SoCalGas Response:**

During development of the SLIP program it became clear that in order to effectively manage a new program of this size, sufficient dedicated resources would be required. Based on SoCalGas' experience with field-operations work, the complexities of interacting with numerous municipalities, contractors, and customers, as well as the volume of expected data collection, analysis, and recordkeeping it was determined that four manager-level positions would initially be required. To date, three of the four positions have been hired with the fourth position scheduled to be filled later in 2011.

The four manager-level resources and their areas of responsibility include:

1. Project Manager to manage the Sewer Lateral Inspection Program,
  - Ensure overall program scope and goals and are followed;
  - Provide guidance and program direction to the Project Engineer and Field Inspection Supervisors.
  - Monitor and manage contractor performance
  - Address program process and procedural issues as they arise
  - Manage program budget
2. Project Engineer to lead the records management effort, records review, facility clearing documentation and establishment of a sewer lateral records collection and retention system.
  - Develop procedures for clearing services, including the documentation findings and resolutions
  - Provide work direction and technical support to field planners during data review process
  - Develop, produce, and monitor KPIs
  - Manage project data
  - Provide technical and planning related support for the Field Inspectors
  - Work with GIS to design permanent database for cleared services and inspection videos
3. Two Field Inspection Project Supervisors to manage the team of Field Inspectors and contractors performing the on-site facility clearing work.
  - Develop and manage schedules for the Field Inspections
  - Provide work direction and manage sewer lateral contractors
  - Primary liaison with field operations management
  - Manage Field Inspectors
  - Establish field operations protocols, processes and procedures

It is anticipated that resource requirements will continue to be refined as the project matures.

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9. Please explain why SoCalGas determined that the Sewer Lateral Inspection Program needs to be performed over a five-year period, as stated on page RKS-47. Please provide a copy of all calculations and/or documents used to support this forecast.

**SoCalGas Response:**

Based on the size and scope of SLIP and the priority on safety SoCalGas chose to complete the Program in 5 years. The initial focus for SLIP is areas where past damages have occurred, highly populated areas (hospitals, schools, nursing homes, business districts etc.) and all other areas where plastic pipe was combined with trenchless technology.

**Estimated Number of Potential Sewer Conflicts at SoCalGas**

<b>Pipe Size</b>	<b>Feet (x 1000)</b>	<b>Miles of Pipe</b>	<b>Potential Sewer Conflicts</b>	<b>Number of Services</b>
1"-2" main	3,925	743	74	65,416
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<b>Installed Since 1970</b>	<b>21,640</b>	<b>4,098</b>	<b>410</b>	<b>360,668</b>

The estimates of 361,000 services and 4,100 miles of main were derived from service history, but this system only contains records that date back to 1994. All other records from 1970 – 1994 must be manually located in paper work order packages. Therefore, it will take a minimum work force of 8 record reviewers to locate the services out of our 6 million customers.

The number of services that each of the 8 reviewer is expected to review based on a 5 year timeframe is 9,017 per year or approximately 38 per day.