

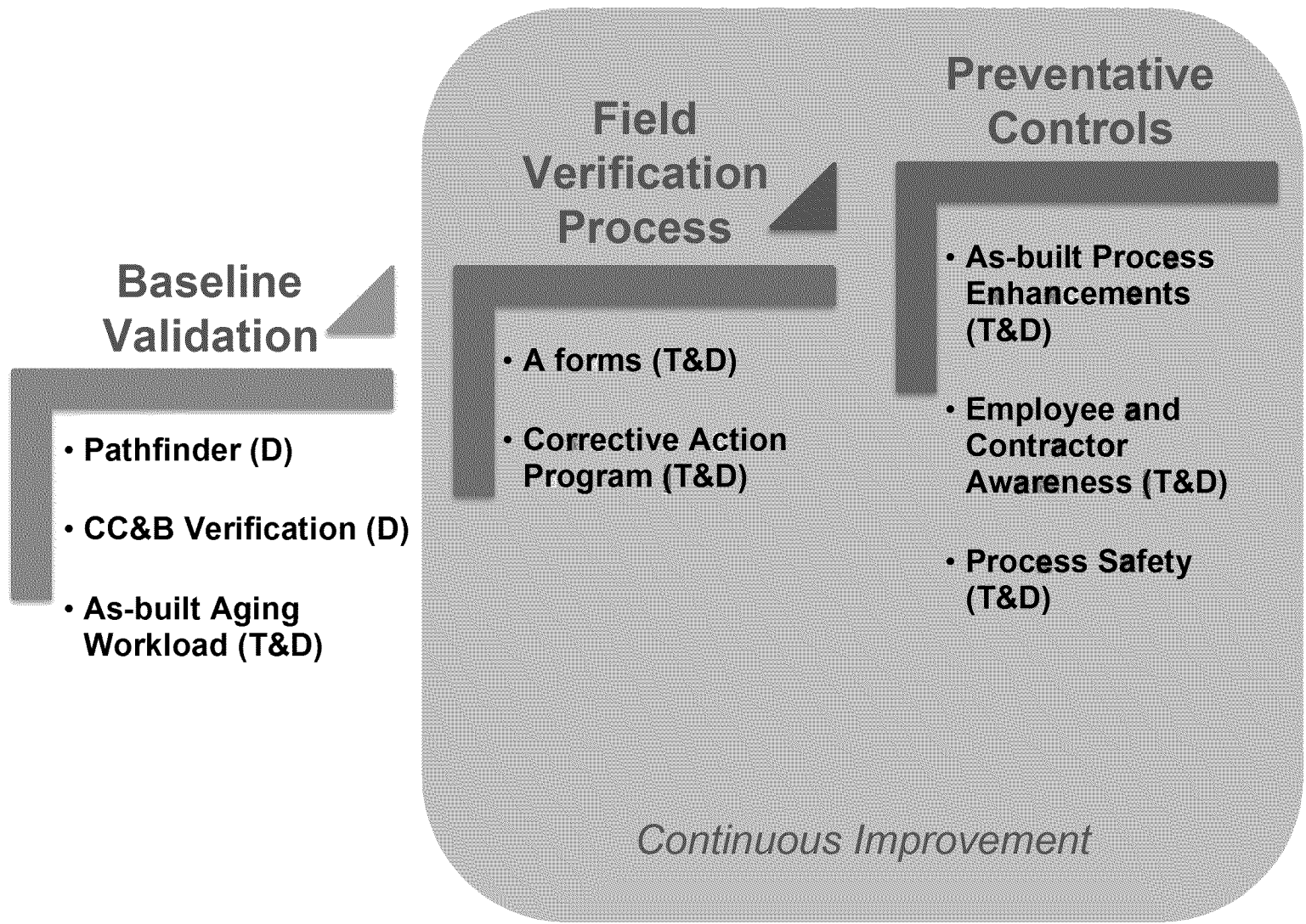
Gas Operations Distribution Records Update

July 11, 2014





Steps in Enhancing Distribution Records Quality



Legend:

- T: Transmission
- D: Distribution



Summary of Progress

Initiative		Status	Progress
Baseline Validation	Pathfinder (D)		<ul style="list-style-type: none"> Data representing 17,000 of 42,000 miles of mains and 1.5 million of 3.3 million services has been converted into GIS, using a risk-based schedule As a result of the conversion, data quality enhancements are being performed including resolving discrepancies between job orders, installation year, coating type, size, material and other relevant attributes On-track to complete system-wide data conversion by end of 2015
	CC&B Verification (D)		<ul style="list-style-type: none"> Compared distribution asset maps with customer billing data that includes meter locations Identified 2,883 distribution services and associated mains not included on the distribution asset maps, which were subsequently leak surveyed and mapped
	As-Built Aging Workload (T&D)		<ul style="list-style-type: none"> Searched all open work orders associated with asset installation or modification in the work management systems (SAP and PSRS) and identified 61,947 open work orders for both transmission and distribution Researched each work order to identify where construction was completed but not yet mapped resulting in 18,113 distribution work orders; some were pending updates in the mapping system by more than 5 years 12,929 open distribution work orders have been completed; On-track to update mapping system for all remaining distribution outstanding work orders by Oct, 2014

Completed
 In Progress
 On-Going
 Early Stage Initiative



Summary of Progress

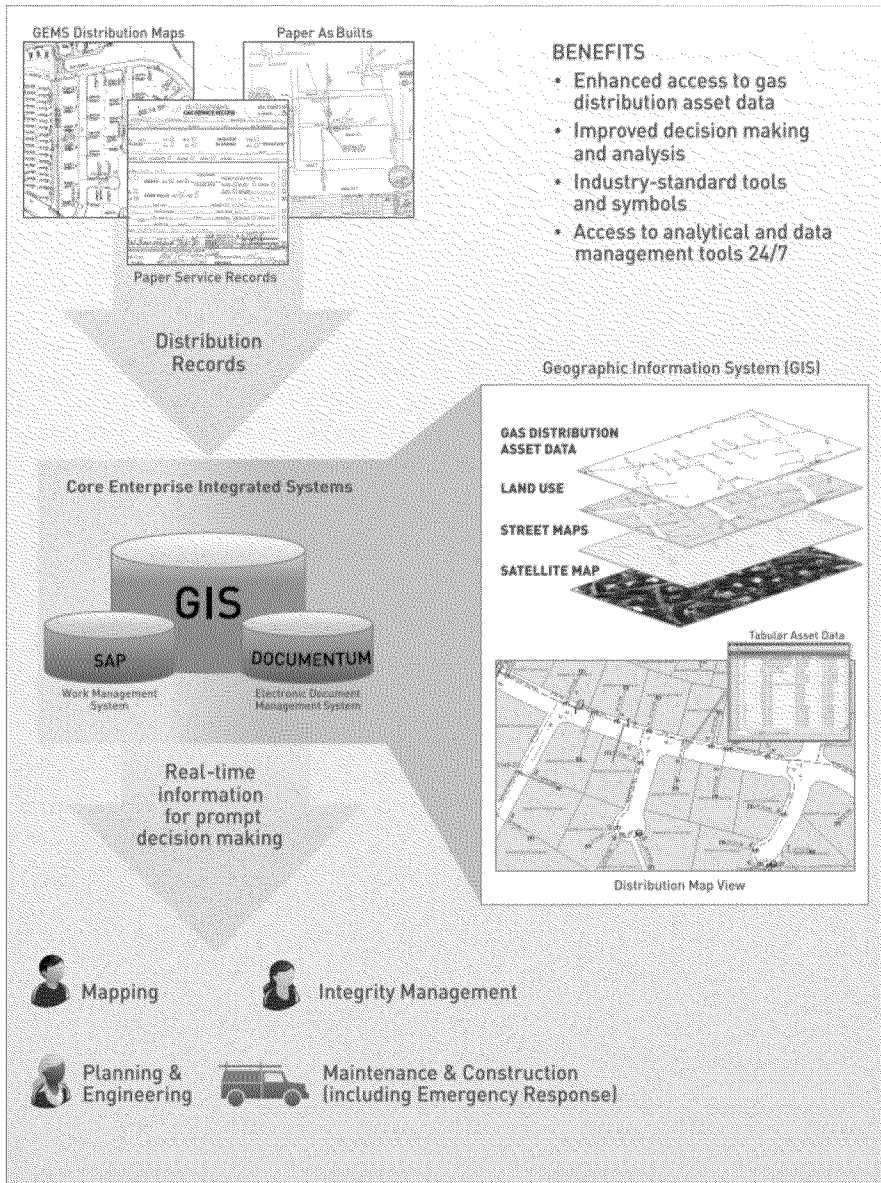
	Initiative	Status	Progress
Field Verification Process	A Forms (T&D)		<ul style="list-style-type: none"> Use of field inspection data for transmission and distribution assets captured during leak repair to update asset specifications in GIS
	Corrective Action Program (T&D)		<ul style="list-style-type: none"> Discrepancies between records and actual asset information input into CAP for tracking and resolution
Preventative Controls	As-Built Process Enhancements (T&D)		<ul style="list-style-type: none"> Track and measure cycle time of every transmission and distribution work order from construction complete to update of mapping system Reduced average duration from 75 days in 2011 (3rd quartile) to current performance of 29 days (1st quartile)
	Employee and Contractor Awareness (T&D)		<ul style="list-style-type: none"> Reinforce importance of having accurate and updated information prior to starting any job and the ability to stop a job in case of uncertainty or identified discrepancy in records Emphasize use of CAP to submit all discrepancies between records and actual asset information
	Process Safety (T&D)		<ul style="list-style-type: none"> Developed and implemented a gas carrier pipe field verification checklist for distribution mains and services Initiated an effort, Records Validation Project, to enhance process controls for validating asset information during design and prior to construction analogous to a “pre-flight” safety checklist

Completed
 In Progress
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Pathfinder (D) (Baseline Validation)



Gas Distribution GIS

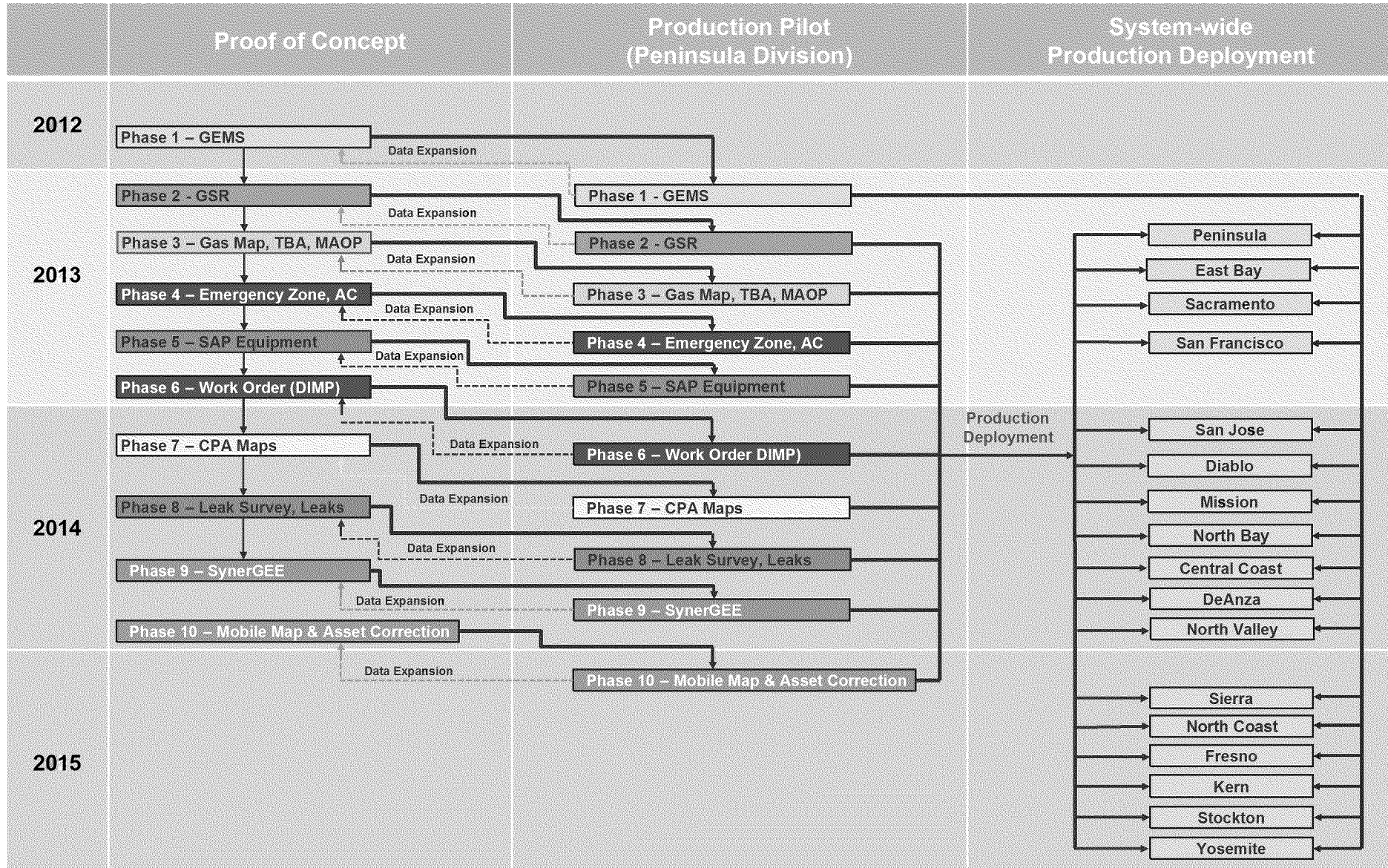


Establishing a single database for gas distribution asset data and substantially improving the accessibility of information resulting in improved:

- Safety,
- Compliance, and
- Work Management Processes



Pathfinder Scope and Schedule (risk-based)



Gas Distribution GIS Demonstration

CC&B Verification (D) (Baseline Validation)

- Verified meter locations in billing database with distribution asset maps and Google Earth
- Identified and analyzed exceptions to validate and determine assets not included on the distribution maps
- Ensured traceable, verifiable, and complete records for the remediation of each exception





CC&B Verification Results

Prepared at the Request of
Pacific Gas and Electric Company



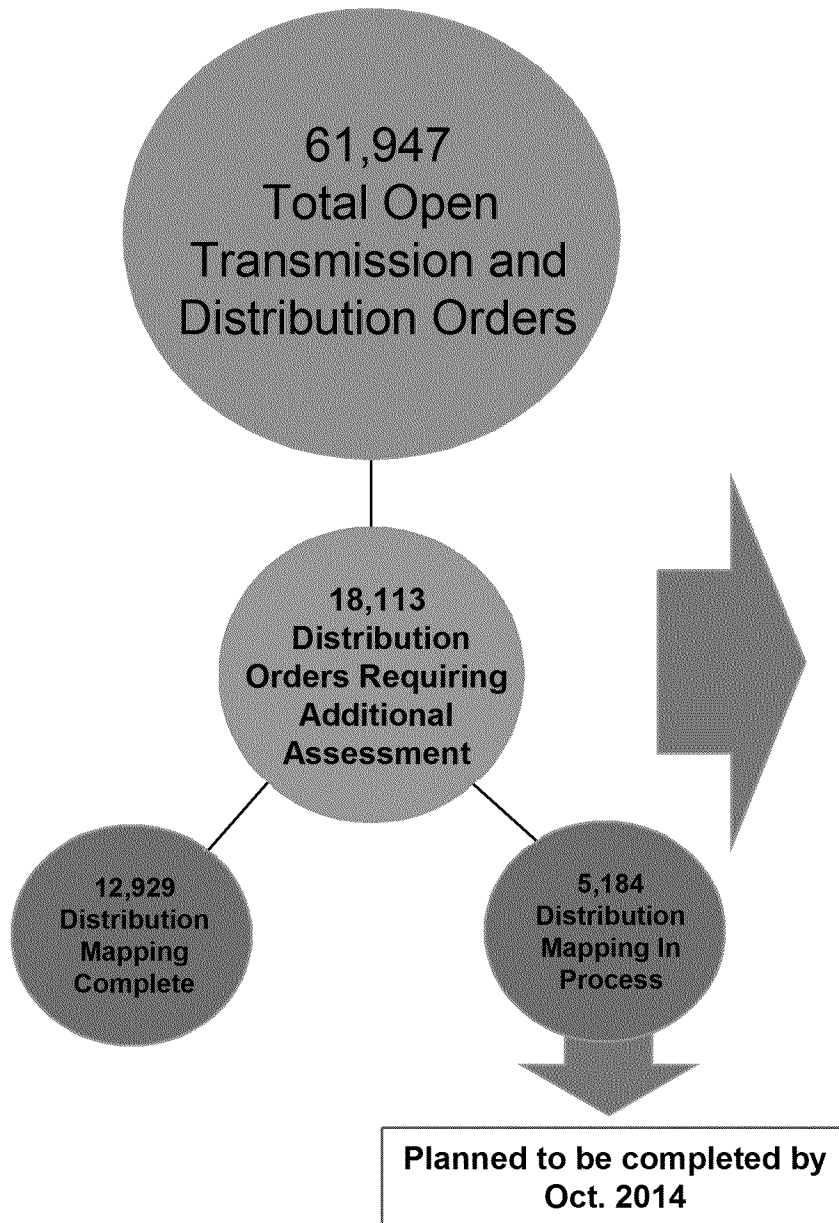
PACIFIC GAS AND ELECTRIC COMPANY
CC&B/GEMS VALIDATION PROJECT
PROGRESS AND RESULTS REPORT BY PG&E MAPPING OFFICE
AS OF JANUARY 14, 2013

Location	Total Plats	Number of Meters	FINAL DETERMINATION				
			Percentage of Review Complete	Estimated Number of Meter Exceptions	Percentage of Meter Exceptions	Number of Plats with Exceptions	Percentage of Plats with Exceptions
1. AUBURN	1,347	193,364	100.0%	22	0.01%	12	0.89%
2. BAKERSFIELD	1,053	146,124	100.0%	34	0.02%	23	2.18%
3. CHICO	822	80,442	100.0%	23	0.03%	17	2.07%
4. CONCORD	1,160	261,709	100.0%	40	0.02%	12	1.03%
5. EDENVALE	1,499	514,550	100.0%	417	0.08%	27	1.80%
6. EUREKA	1,085	101,714	100.0%	117	0.12%	50	4.61%
7. FRESNO	1,430	260,754	100.0%	407	0.16%	15	1.05%
8. HAYWARD	1,023	317,489	100.0%	27	0.01%	13	1.27%
9. MERCED	1,997	271,454	100.0%	86	0.03%	37	1.85%
10. OAKPORT	613	327,798	100.0%	69	0.02%	9	1.47%
11. SACRAMENTO	2,790	635,781	100.0%	151	0.02%	30	1.08%
12. SALINAS	1,654	212,672	100.0%	329	0.15%	48	2.90%
13. SAN CARLOS	709	242,187	100.0%	96	0.04%	7	0.99%
14. SAN FRANCISCO	568	289,063	100.0%	219	0.08%	42	7.39%
15. SAN RAFAEL	975	197,043	100.0%	648	0.33%	44	4.51%
16. SANTA ROSA	1,006	163,236	100.0%	93	0.06%	8	0.80%
17. STOCKTON	1,778	226,783	100.0%	96	0.04%	41	2.31%
18. UKIAH	221	14,452	100.0%	9	0.06%	6	2.71%
TOTALS / AVERAGES:	21,730	4,456,615	100.00%	2,883	0.06%	441	2.03%

As-Built Aging Workload (T&D) (Baseline Validation)



Distribution Work Orders Aging Workload



Distribution Orders requiring additional assessment after first review

Distribution Asset Family	Total
Distribution Services	6,385
Distribution Copper Services - no order	3,607
Distribution Mains	3,464
Measurement & Control - no order	2,089
Distribution Services - no order	2,072
Measurement & Control	467
CNG/LNG	29
Total	18,113

A Forms (T&D) (Field Verification Process)



Leveraging Mobile A-Form Data

Leak A-Form ← compared → GIS Attribute Data

Display Notification : Repair Data

Notification Checklist

- Leak Information
- Pipe Data
- Repair Data
- Inspect/Pipe Cond: Metal
- Installation/Pressure Test
- Incident
- Dig-in/Damage Data
- USA Locate & Mark
- Mismark
- Mapping Review
- Leak History
- Status
- Assignments
- Document Management
- Comments

Notification Summary

Number: 107994253
Notif Type: GC
Problem Cat: GRDLK
Order No.: 42117810
Ref. Notif.

Created By: GCMFASCPIC
Create Date: 05/06/2014
Changed By: BCH_WM_UCS
Change Date: 06/11/2014

Repair Data CP Condition

USA notified? Yes If No, Why?
USA Ticket #: 138309 Valid Date: 05/02/2014
Response Date: 05/02/2014 Response Time: 13:35:00 24 hr format
Gas Loss Calculation Required
Repair Completed by:(LAN ID): ocb9 Ext Contractor
Repair Completed in Field on: 05/02/2014 Repair Completed in Field at: 18:00:00 24 hr
Repair Location: on service 6 feet from meter
Repair Remarks: replaced 10 feet of service
Paving Required: No
Was repair exclusively completed by tightening, lubricating, and/or adjusting: No
Was facility deactivated and returned to service: No
Repair Activity: Replace Partial Service
If other, explain:
Size Installed: 1.00
Replaced With: PE2406/2708 (Yellow)
Copper Entirely Replaced: Aldyl A Removed:
Post Recheck Required: No Post Recheck By date:
Pipeline Engineer Consulted?: Engineer Consulted (LAN ID):
Date Consulted:

Shape	<Shape>
Source Accuracy	GSR
Construction Status	Complete
Installed Job Order	PM42117810
Installed Completion Date	5/2/2014
Service Type	Service
Locating Wire Indicator	Yes
Joint Trench Indicator	No
Physical Wall Map	3278
Recorded Wall Map	3278
Physical Plat	C5
Recorded Plat	C5
Physical Block	14
Recorded Block	14
Material	Plastic
Nominal Diameter	1
Plastic Type	PE2406/2708 (Yellow)
Non Locatable Stub	No
Pressure Classification	High Pressure
Owner	PG&E
Installation Method	Unknown
Insert Indicator	No
Length Source	Field Measurement
Measured Length	8
MAOP	<Null>
MAOP Unit of Measure	Pressure Per Square Inch
Applicant Install Exp Date	<Null>
Applicant Trench Exp Date	<Null>
MIX Agreement	<Null>

Corrective Action Program (T&D) (Field Verification Process)



CAP Items – Records Discrepancies

Miss-mapped (or mapping discrepancy) related items

SAP No.	Initiation Date	Title	Risk
7000373	10/29/2013	SR-047 Mapping-Svc not posted/Citrus Hts	Medium 3-B
7001198	1/8/2014	Gas Plat Sheet 3414-C2 Error	Low 4-C
7001351	1/16/2014	Inaccurate gas plat map info. - Orinda	Low 4-D
7001876	2/18/2014	DCUST1530 Not Drawn in GIS - 3" TP Serv	Medium 3-B
7001940	2/19/2014	School Srvc not on Gas Plat - Danville	Medium 3-B
7001929	2/21/2014	unmapped transmission mains in ST & YO	Medium 3-B
7001937	2/21/2014	Trans assets not mapped by both T & D	Medium 4-A

Miss-mapped (or mapping discrepancy) related items specific to inserted mains or services

SAP No.	Initiation Date	Title	Description	Risk
7000189	10/28/2013	Gas Leak Repair and a CPUC Site Visit	<p>On July 30, 2013, a General Construction (GC) crew working at [Redacted] Mountain View, welded a M2 fitting onto the 1-1/4 inch steel gas service preparing to transfer the gas service to the new plastic gas main the following day. The 1-1/4 inch steel gas service had an unmapped inserted 1 inch plastic gas service that melted due to the heat of the weld. The GC crew did not notice the service was leaking before ending the day. On July 30, 2013 at 1717 hours, PG&E was notified of a gas odor at [Redacted] Mountain View, by the Mountain View Fire Department. A Gas Crew was dispatched, the gas was shut in at 2100 hours, repairs were made and service was restored to 7 customers on July 31, 2013 at 0030 hours.</p>	Medium 3-B