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2011 Annual System Integrity Plan  
Self-Audit Report  
For  
Magellan Midstream Partners, L.P.  
Longhorn Pipeline  
February 26, 2013

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## **1.0 Definitions**

CMS: Compliance Management System

Longhorn: the entire pipeline system and all parties including LPP and MPL

LOPA: Layer of Protection Analysis

LPP: Longhorn Partners Pipeline (the asset owner until August 27, 2009 and its direct employees / contractors, excluding MPL)

LPSIP: Longhorn Pipeline System Integrity Plan

MPL: Magellan Pipeline Company, L.P. (the asset operator and owner as of August 27, 2009)

PHMSA: Pipeline and Hazardous Materials Safety Administration

PSSR: Pre-Startup Safety Review

SIP: Magellan Midstream Partners, L.P. System Integrity Plan

Operator: Magellan Pipeline Company, L.P. (MPL)

SBRMA: Scenario Based Risk Mitigation Analysis

SIP: System Integrity Plan

## 2.0 Introduction

The Longhorn Pipeline System (Longhorn) was initiated in the mid-1990s, with the intent of converting an existing West Texas crude oil pipeline into refined products service, and reversing the flow to take refined products from the Houston Gulf Coast area to markets in West Texas and the Southwest US. The project encountered opposition from various groups, resulting in a lawsuit and eventual settlement as described in Table 1: History of the Longhorn System, below.

**Table 1: History of the Longhorn System**

1949 – 1995	Exxon constructed the 18"/20" pipeline, Crane to Baytown, to transport crude oil; operated and maintained / refurbished until pipeline was idled and purged with nitrogen.
Oct 21, 1997	Longhorn acquired the existing (idled) pipeline from Exxon.
April 1998	National Environmental Policy Act (NEPA) lawsuit filed in Federal Court in Austin.
1998/1999	<ul style="list-style-type: none"> <li>• Cleaning and refurbishment of the existing pipeline;</li> <li>• Construction of new pump stations (Galena Park, Satsuma, Cedar Valley, Kimble County, Crane, and El Paso)</li> <li>• Construction of El Paso Terminal</li> <li>• Construction of pipeline extensions: 18" Crane to El Paso; 8" Crane to Odessa; 20" GATX to Tie-In; and 8" and 12" pipelines from El Paso Terminal to tie-ins with other systems.</li> </ul>
March 1999	Settlement Agreement requires Environmental Assessment, which ultimately leads to the Longhorn Mitigation Plan.
November 2000	Finding of No Significant Impact issued and Longhorn Mitigation Plan published.
2001 – 2004	Pre-Startup Mitigation Commitment Activities Performed
January 27, 2005	Official startup date for the Longhorn pipeline system.
2006	High Resolution Magnetic Flux Leakage (HRMFL) in-line inspections completed for Galena Park to Crane.
August 2006	Flying J acquires Longhorn Partners Pipeline, L.P.
2008	High Resolution Magnetic Flux Leakage (HRMFL) in-line inspections completed for Crane to El Paso.
2008	Transverse Field MFL Inspection (TFI) in-line inspections completed on Galena Park to Crane.
December 22, 2008	Parent company Flying J Inc., Longhorn Partners Pipeline, L.P. and affiliated companies file for voluntary protection under Chapter 11 of the U.S. Bankruptcy Code, allowing for continued pipeline operation during financial reorganization.
August 27, 2009	Magellan Pipeline Company, L.P. purchased the Longhorn pipeline.

Longhorn agreed to implement a Longhorn Mitigation Plan (LMP) as part of the Environmental Assessment (EA) conducted. The LMP was supplemented twice, immediately after it was originally developed. The LMP includes 40 “Mitigation Commitments” that addressed various integrity issues on the Longhorn system both before and after startup. The LMP also committed Longhorn to implement the Longhorn Pipeline System Integrity Plan (LPSIP), which includes three main elements:

1. Management Commitments (14 total), addressing various integrity management programs for the pipeline system, including a commitment to conduct a self-audit of the LPSIP each year,
2. LPSIP Process Elements (12 total), addressing various risk management processes for the pipeline system, and
3. An Operational Reliability Assessment (ORA), providing an independent technical analysis of various integrity threats on the pipeline system.

This report is the result of the annual LPSIP self-audit for 2011, and addresses the first two items listed above. Magellan contracted with RCP Inc., a regulatory and engineering consulting firm, to perform the 2011 self-audit. There is a separate reporting process for the Mitigation Commitments, and they are not addressed in this report. The ORA has its own reporting process which is conducted separately from this report.

The overall structure of the LMP, Mitigation Commitments, LPSIP, Management Commitments, Process Elements, and Operational Reliability Assessment are depicted in Figure 1: LMP Organization. In this report, the 14 Management Commitments will be referred to sequentially as MCxx. Likewise, the 12 LPSIP Process Elements will be referred to sequentially as PExx. The Table of Contents for this document provides an easy reference, as the section numbers for the Management Commitments and Process Elements correspond with the appropriate MCxx or PExx number. For example, MC13 refers to the Management Commitment to perform a self-audit, and is discussed in section 13 of “Findings for the LMP Management Commitments”. Likewise, PE7 refers to the Management of Change Process Element, and is discussed in section 7 of “Findings for the 12 LPSIP Process Elements”, and so forth.

# LONGHORN MITIGATION PLAN [LMP]

[INCLUDING SUPPLEMENTS 1 AND 2]

## Mitigation Commitments

40 very specific “to-do” activities to mitigate specific risks on the pipeline system

## System Integrity Plan [LPSIP]

### Management Commitments

14 Management-Level Commitments:

- Includes a commitment to implement the 12 System Integrity Process Elements (below)
- Includes a commitment to perform an annual self-audit of the LPSIP

### System Integrity Process Elements

12 programs designed to manage system integrity

### Operational Reliability Assessment (ORA)

A detailed, independent technical assessment of key risk management activities for the system

Figure 1: LMP Organization

### **3.0 Self-Audit Methodology**

The self-audit team was composed of 3 representatives from RCP Inc., all experienced auditors with over 50 years of combined experience in the industry. The auditors' statements of qualifications are given in the appendix to this report. They reviewed the LMP, the LPSIP, and the SIP as well as various documents from Longhorn as listed in the appendix, including policies and procedures, work activity reports, agreements with third parties, performance tracking spreadsheets, and other relevant documents. They also interviewed personnel from MPL in Austin, Houston, Tulsa, and El Paso, including personnel in field operations up through corporate executives, and inspected the facilities at the El Paso terminal. The complete list of personnel interviewed is given in an appendix to this report. If more than one person had held the same position during 2011, the auditors generally interviewed all those personnel at once. All the field activities for the audit were performed in April 2012. The auditors developed the opinions and findings in this report based on the interviews and documentation, using their best professional judgment and experience. Interim audit findings were reviewed with MPL to ensure that they were factually correct and considered all appropriate information – but the findings and conclusions in this report are the independent work of the audit team.





## **4.0 Significant System Developments in 2011**

During 2011, Longhorn continued to implement system integrity activities as required by Federal Pipeline Safety regulations and the LMP.

Longhorn completed 102 digs based on the results of the UT-tool inspections required by the LMP. Results indicated small amounts of metal loss due to corrosion, both internal and external.

Longhorn continued the 2010 project to improve their Compliance Management System (CMS). This project is verifying that all applicable tasks are captured in CMS, that all dates, assignees, and tasks are correct, and is standardizing nomenclature for each task. The verification process was started in the summer of 2011 and completed in the spring of 2012. Operations personnel were provided with instructions and tools to complete this verification. A new work flow process for changes in CMS was rolled out in July 2011.

The CMS project was completed in 2012, however, two instances of incorrect setup in CMS of maintenance tasks occurred in 2011. In one instance, a coupon was not pulled and tested in the required 4 month time period because it was not set up correctly in CMS as a Longhorn requirement. In another instance, a near miss occurred when a DOT calibration shown to be due in May 2011 was identified prior to non-compliance.

The CMS project should continue to receive a high level of attention so that these issues do not occur in future years. MPL needs to ensure that CMS contains Longhorn Specific deadlines where appropriate.

Longhorn had three relocation projects in 2011 due to County road work and subdivision work.

## 5.0 Summary of Findings from the Self Audit

As mentioned above, the LMP requires that Longhorn conduct a self-audit of the LPSIP each year. The LMP specifically requires that the self-audit address 5 “core areas” of system integrity. Each of the 5 listed core areas is addressed below. Subsequent sections of this report address each of the 14 Management Commitments and the 12 Process Elements in the SIP.

### 5.1 A synopsis of the most important integrity issues being addressed on the Longhorn Pipeline System and the status of activities and programs used to manage these risks.

The activities and programs used to manage risk on the Longhorn system are addressed individually in the Management Commitments and Process Elements sections of this report. The activities and programs used to manage risk on the Longhorn system are mature, and the audit revealed that these programs are functioning and are effective. Areas for improvements in the programs are described in the Recommendations section of this report.

Several employees interviewed indicated that third party damage is the most important integrity issue for the Longhorn pipeline. In 2011, there were two line strikes, one near miss, one instance where digging was occurring without a One Call, and one instance of rectifier cables damaged by third party excavation. No new programs or activities were identified as addressing damage prevention. The Third Party Damage Prevention assessment is attached in the appendix.

In 2011, there was continued evidence of significant pipe movement in the pipe racks and high pump vibration levels at the tanks at the El Paso terminal. MPL did an “I-rod” project in 2011 to attempt to address the pipe movement; however it did not resolve the problem. The pump at Tank 12 was modified in 2011 as a pilot project. In 2012, tanks 6, 7, 9 and 13 were also modified. Pipe movement readings taken in the second half of 2012 indicate that these actions have resolved the issues.

Pump vibration is also a problem at the Satsuma, Kimble and Crane pump stations. These issues are being addressed in 2012-2013 in conjunction with the Reversal Project.

Two corrosion mitigation issues were identified, ground bed replacements and shorted casings. Ground bed replacements were not scheduled in a timely manner (prior to depletion). In one instance, the readings were below criteria for over 12 months until the ground bed was actually replaced and in service. In 2011, MPL received a PHMSA Notice of Violation for their management of shorted casings. MPL has requested a hearing on this issue.

Receiving “dirty” product, which damages meters and clogs valves, was identified as an integrity issue at the El Paso Terminal. This may be resolved by the Reversal Project.

Another significant integrity issue identified by MPL is maximum operating pressure (MOP) exceedances. In 2011 there were three instances of maximum operating pressure (MOP) exceedances

## **5.2 Important insights, results, and lessons learned from the previous year.**

Several insights were learned from inline inspections (ILI) and Probability of Exceedance (POE) digs. The ultrasonic tool (UT) had better resolution than the MFL and TFI tools. The UT tool, results indicated that laminations are not an integrity problem. The ORA consultant correlated all three pig runs to determine corrosion growth rates. They determined that the corrosion growth rates are less than the 6 mpy that was used in their assumptions, indicating that this assumption is conservative.

MPL issued 11 “Lessons Learned” bulletins in 2011, addressing motor vehicle safety, suspicious individuals at or near facilities, setting tank alarms, valve failures, control valve inspections, excavation safety, vapor combustion units and loading racks, One Call issue due to tank lines not in One Call system, safety hazards of chemicals, and thefts at unmanned stations.

MPL experienced a lot of weather issues, such as flooding and tornadoes, which require additional diligence. Although these events did not occur on the Longhorn pipeline, they can be used as learning opportunities in the event that they do in the future.

As noted by the Operations Manager, turnover in field personnel requires more diligence in terms of training and supervision.

## **5.3 Insights from new integrity management processes or technologies, or innovative applications of existing technologies.**

Starting in 2011, all aerial patrol observations are coordinated through Tulsa (as is the practice elsewhere in MPL), instead of being coordinated through the Austin field office. This has improved management of the data, and allows automated identification of Tier 1, 2, and 3 areas. It also facilitates the identification of areas with shallow pipe and no-till agreements. All observations and their status are now tracked in a computer, and reports can easily be generated. Daily aerial patrol reports now go to the Magellan One Call group so that local technicians can be immediately notified if any issues are identified.

Line locating equipment (old Metro Techs) are being replaced with upgraded equipment with data logging capabilities. In addition, “Call 811” stickers are being placed on equipment near the ROW.

MPL did a Layer of Protection Analysis (LOPA) for the first time in 2011. This analysis was done for the Odessa Station portion of the Reversal Project.

#### **5.4 Performance measurement results.**

The “scorecard” for 2011 is given in an appendix to this report. There were 5 releases in 2011; two on the pipeline right-of-way (from a vehicle oil pan and a vehicle hydraulic hose) and 3 from facilities. Only one of these, from a facility, was DOT-reportable. It was in a Tier 1 area.

There were four third party damage near misses; three were in Tier II areas and one in Tier I. There was one third-party damage due to a One Call violation and no unauthorized encroachments in 2011.

The applicable government agencies also exercise oversight over the Longhorn system.

#### **5.5 New integrity management programs or activities that will be conducted or significant improvements to existing programs and activities.**

Starting in 2011, all aerial patrol observations are coordinated through Tulsa (as is the practice elsewhere in MPL), instead of being coordinated through the Austin field office. This has improved management of the data, and allows automated identification of Tier 1, 2, and 3 areas. It also facilitates the identification of areas with shallow pipe and no-till agreements. All observations and their status are now tracked in a computer, and reports can easily be generated. Daily aerial patrol reports now go to the Magellan One Call group so that local technicians can be immediately notified if any issues are identified.

MPL is evaluating a “spiral MFL” tool elsewhere on its system, which should be able to detect both longitudinal and circumferential defects at the same time. This technology may be applied to the Longhorn system for future inspections.

MPL is developing a new risk model in 2012 to reflect the change in flow direction and product as a result of the Reversal Project.

## **6.0 Findings for the LMP Management Commitments**

The 14 Management Commitments described in the LMP are addressed below.

### **6.1 MC1: Longhorn Pipeline System Integrity “Process Elements”**

The first of the 14 Management Commitments addressed in this section of this report commits Longhorn to implement a System Integrity Plan (SIP) consisting of 12 “process elements” that are “over and above” the federal and state regulatory requirements. The 12 SIP elements are addressed in the next section of this report.

## **6.2 MC2: Data Gathering and Identification and Analysis of Pipeline System Threats**

There is a significant program in place to accumulate and integrate a wide array of information related to the operation and integrity of the Longhorn system, as described in LMP section 3.2.2. MPL has dedicated a full time person to this task, who receives information from many different data sources that is compiled and entered into the Longhorn risk model on a monthly basis. This information is also forwarded to the ORA contractor, who performs their own evaluation of the data. MPL has also dedicated a full time Risk Engineer for the Longhorn system to work with all SMEs related to the Longhorn system to evaluate risks and ensures compliance with SIP, DOT and the LMP.

MPL continued to perform Incident Investigations during 2011. There were 13 incident investigations completed in 2011. These investigations are not limited to incidents that are reportable to government agencies, and include other types of operational incidents such as near misses. The results of these incident investigations are shared broadly throughout LPP and MPL. Likewise, Longhorn captures information concerning Incorrect Operations (IOs), and summarizes this information on a spreadsheet on a quarterly basis to identify trends and potential areas for improvement. Incorrect Operations data is drawn from Abnormal Operating Conditions (AOCs), incident investigations, and Hazard / Near Miss (HNM) cards (described in item 11 of the SIP process elements). MPL manages changes to the Longhorn system through SIP process Element 11 – Change Management. Management of Change Requests (MOCR) are listed on a report which is widely distributed throughout MPL personnel responsible for Longhorn operations. This report provides a quick reference as to whether the MOCR is either open or closed.

The LMP also commits Longhorn to conduct an annual Third Party Damage Prevention Program Assessment. The assessment for 2011 was conducted and reviewed as required.

### **6.3 MC3: Integration of System-Wide Activities**

Using information from the data gathering processes mentioned above and the data tracking and scorecard processes mentioned in PE 12, Longhorn conducts system-wide reviews of activities to ensure that all relevant information about the operation and integrity of the system is considered and evaluated on a routine basis.

A Mitigation Plan Scorecarding and Performance Metrics document is prepared and reviewed quarterly. Incidents are reviewed on a quarterly basis by Operations Directors, VP of Operations, and VP of Technical Services.

Lastly, the Operational Reliability Assessment (ORA) provides a comprehensive, independent technical review of all types of threats to the Longhorn system on an annual basis.

### **6.4 MC4: Incorporation of Engineering Analysis**

Longhorn consistently obtains the assistance of engineering experts (both inside the organization, and from third parties) to help identify, manage, and resolve potential integrity issues on the pipeline system. The results of each in-line inspection are reviewed by independent pipeline assessment experts who perform an independent analysis and identification of any additional areas for physical inspection of the pipe based on statistical analysis of the results (known as the probability of exceedance, or POE, review). The results of ILI tool runs are also sent to a third party to conduct seam or girth weld assessments, depending on the type of assessment tool used.

### **6.5 MC5: Integration of New Technologies**

Longhorn continues to incorporate new technologies for the operation of the system, and to evaluate the use of additional technologies as appropriate. A pilot program was started to make forms such as Hazard Near Miss and Management of Change Requests electronic and available on smart phones. Special “coupon” style cathodic protection test stations are being installed on the pipeline whenever test leads are replaced, in order to obtain IR- considered test readings. The Bullhorn continuous CP monitoring system is still being used.

### **6.6 MC6: Root Cause Analysis and Lessons Learned**

This Management Commitment refers to the implementation of a formal incident investigation program for actual and near miss events, and for repairs that are made to correct deficiencies in system integrity. This program is described in PE6.

MPL uses a “Lessons Learned” program to share information and key learnings throughout the company. MPL issued 11 “Lessons Learned” bulletins in 2011, addressing motor vehicle safety, suspicious individuals at or near facilities, setting tank alarms, valve failures, control valve



inspections, excavation safety, vapor combustion units and loading racks, One Call issue due to tank lines not in One Call system, safety hazards of chemicals, and thefts at unmanned stations.

MPL conducts monthly SIP meetings in Austin, El Paso, and Crane / Odessa, where HNM cards, LPP procedures, and other accidents and lessons-learned are reviewed with operating personnel.

## **6.7 MC7: Industry-Wide Experience**

Longhorn continues to benefit from the industry-wide sharing received by participation in industry and governmental committees. The Sr. Vice President of Operations and Technical Services sits on the API/AOPL Pipeline Performance Excellence Team (PET), which investigates liquid pipeline issues and develops programs and recommendations for improvements throughout the industry. He also sits on the API Operations Technical Committee (OTC), the primary US industry forum for technical issues for liquid pipelines, and is a member of the US Federal Government's Technical Hazardous Liquid Pipeline Safety Standards Committee (THLPSSC), which is the primary governmental forum for all types of liquid pipeline issues. He was on the planning committee for the Pipeline Information Exchange (PIX) workshop for the 3<sup>rd</sup> year. In 2011 he will also be a member of the joint API / AOPL Pipeline Leadership organization.

Employees also participate in various internal and external meetings and events. VP of Technical Services participates in the API Operations & Technical Committee and is on the planning committee for the Pipeline Information Exchange (PIX) workshop for the second year. The Director of Technical Services participated in the Pipeline Pigging and Integrity Management Conference, Improving Pipeline Risk Assessment workshop, and the Pipeline Information Exchange. He also presented at the following industry events: Managing Challenging with Pipeline Seam Welds workshop (presented in a working group session on Seam Integrity assessments) and the API Risk Forum – Facility Integrity (presented on Magellan's 50 by 2 program). The Director of Environmental Health and Safety is a participant in the API Environmental Health and Safety Group. The Supervisor of Operations Control Applications on the API Cybernetics Committee, and MPL made a presentation at the 2011 API Cybernetics Symposium. The supervisor of One Call serves on the NE Oklahoma Damage Prevention Council and presented at the 2011 API/AOPL Damage Prevention workshop.

All MPL land representatives have meetings and share information concerning land and landowner issues throughout the Magellan system. The Safety Specialist is a member of the American Society of Safety Engineers.

## **6.8 MC8: Resource Allocation**

Funds and personnel are made available as required to implement the requirements of the SIP. Allocation of resources is now done on an MPL-wide basis. Discretionary expenditures are reviewed and approved by the Maintenance Capital Expense Management Team (MCEMT),



composed of the two Directors of Operations, the Director of Engineering, an Asset Integrity Director, and the Director of HSE. Proposed projects are classified into one of four categories:

- Break / Fix (evaluated to see if repairs are economically justified)
- Regulatory / SIP (non-discretionary unless the asset is shut in)
- Discretionary
- Obsolescence (a new category for 2010, addressing equipment that is no longer manufactured and for which spare parts are difficult to obtain)

MPL uses a Project Assessment Tool (PAT) to risk-rank proposed projects for health, safety, environmental, and commercial risks. Longhorn projects completed in 2011 included the Holland Avenue tie-in to Galena Park, Pedernales River project, modifications of tank pump #12 at El Paso Terminal (to address vibration issues), replacement of a pressure control valve (PCV4) at El Paso Terminal, removal of old filter system at Crane Station, removal of piping at Cottonwood Station, and installation of I-rods on tank line pipe supports at El Paso. While there are no dedicated funds for Longhorn discretionary expenditures, all personnel who were interviewed during the auditing process expressed their belief that Longhorn has adequate resources from a financial standpoint. For the first time in the history of these internal audits, one interviewee stated that more support from technical services was needed. That opinion was not expressed by any other interviewee (although all were asked). The auditors recommend that Magellan consider this input when conducting their annual review of staffing levels. The Longhorn system still has dedicated resources, including a full time integrity engineer and a full time risk model and data / ORA coordinator. There was little personnel turnover for Longhorn in 2011.

## **6.9 MC9: Workforce Development**

MPL continues to use their new employee “on-boarding” process, which continues to evolve as feedback is received from the participants. This process now includes an orientation on the SIP. All supervisors have also attended a Leadership Expectations class (there were 7 total classes), which includes case studies tied to actual incident investigations and lessons-learned.

Engineers participated in monthly presentations on various topics. A guidance document was developed for skill progression for engineers. In 2011, all engineers attended a special “on-boarding” session to review MOCs, PSSRs, hydrotesting procedures, and electrical safety. Engineers and other employees received LOPA training in 2011.

Technicians were provided training on the LPSIP with additional training scheduled for 2012.

MPL conducted a 1 day course on the Pipeline Leak Detection System for the controllers.

Incident Investigation training was conducted for 19 Field Operations personnel in 2011 and more training is planned for 2012.



#### **6.10 MC10: Communication to Longhorn and Operations Management**

This commitment is no longer relevant, since MPL both owns and operates the Longhorn pipeline system and there is no separate Longhorn management structure with which to communicate outside of MPL itself.

#### **6.11 MC11: Management of Change**

This management commitment refers to the implementation of a Management of Change Program. The LMP requires that all documents and files affected by the change be identified and modified in a timely basis. MPL's management of change process is described in SIP Element 11 and is addressed in section PE7 of this report.

#### **6.12 MC12: Performance Monitoring and Feedback**

This management commitment is addressed in PE12.

#### **6.13 MC13: Self Audit**

The LPSIP self-audit has been prepared each year as required. This report is the result of the 2011 LPSIP self-audit. Recommendations from prior self audits are being tracked to completion on the 2010 Self Audit Recommendation & Action Plan. The auditor's remaining recommendations are given in the "recommendations" section of this report.

#### **6.14 MC14: Longhorn's Continuing Commitment**

Longhorn continued to implement the programs required by the LMP in 2011. All personnel interviewed by the auditors indicated that financial and personnel resources were adequate to ensure the integrity of the Longhorn pipeline.

## 7.0 Findings for the 12 LPSIP Process Elements

The 12 process elements described in the LMP are addressed below.

### 7.1 PE1: Longhorn Corrosion Management Plan

Some issues were identified in the rectifier reports. Several readings were low and were identified as being due to depletion of the ground bed. The readings had been declining for a while; however, the ground bed was not budgeted for until the readings were below the minimum reading of -0.85 mV. In one instance, the readings were below criteria for over 12 months until the ground bed was actually replaced and in service. The LMP Corrosion Management Plan states that “Correction action for noted deficiencies in rectifier operation shall be determined and completed as soon as practical... All deficiencies will be resolved within one (1) month of discovery...”

Close interval surveys were performed as needed in the higher-tier areas, including 100% of the tier III locations. Results of the tier II locations were that 99.843% of the pipelines surveyed have “ON” potentials more negative than -850mV and 88.118% of the pipelines surveyed have polarized (“Instant OFF”) potentials more negative than -850mV. Recommendations from the consultant that performed the work were that 1.) Pipelines not meeting NACE established cathodic protection criteria be further investigated and 2.) That the pipeline be excavated and inspected or compared and correlated with previous in-line inspection results and/or other inspection methodologies as applicable at selected localized depressions in the potential profile. Records indicate that all items identified were resolved.

Atmospheric corrosion inspections were performed as required and six (6) locations identified as needed repairs. All locations have been repaired.

No API 653 internal inspections were completed at the El Paso terminal during 2011. During a PHMSA audit, the risk-based tank inspection program was noted to have deficiencies. However, prior to the end of the audit, MPL corrected the deficiencies.

Internal corrosion is monitored through the use of corrosion coupons, which are inspected 3 times a year. The coupon results have not indicated any internal corrosion problems. Corrosion inhibitors are used to ensure minimal internal corrosion. In one instance, a coupon inspection was not done within the required interval for a new coupon location. This was due to the incorrect setup of the coupon inspection interval in CMS. The requirement for Longhorn is to inspect coupons 3 times per year, not to exceed 4½ months. However, the new coupon was set up in CMS for inspection twice per year, not to exceed 7½ months (non-Longhorn intervals), thus was out of compliance. As noted in the recommendations, this should have been identified during the CMS verification project.

On March 23, 2012, Magellan received a Notice of Probable Violation, Proposed Civil Penalty and Proposed Compliance Order as the result of inspections performed in 2010 and 2011. One of

the probable violations, 192.575, cited by PHMSA stated that for metallically and electrolytically shorted casings on Magellan pipelines, including the Longhorn Pipeline, Magellan “has not consistently taken measures to achieve electrical isolation between the casings and carrier pipes.” Magellan has requested a hearing with PHMSA on this issue.

Per the LMP and Magellan procedures, “During each cathodic protection survey, readings are taken at each cased crossing to detect any location where the carrier pipe may be shorted to the casing pipe. If the casing potential is within 100 millivolts of the pipeline potential, the casing is investigated to determine whether a metallic short to the carrier pipe is present. If a short is verified, a plan of action shall be developed within three months from the time of discovery. The practicality of clearing the short will be considered before any other measures are used. Action shall be taken to clear the short (a) in Tier I areas within six months of development of the action plan; and (b) in Tier II and Tier III areas within three months of development of the action plan.” A shorted casing was identified at MP 141.505, a Tier II location. The shorted casing was discovered on October 25, 2011 and an action plan for this casing was developed on January 20, 2012, even though testing in December 2011 indicated the casing was not shorted. The action to repair this casing, if shorted, should have been completed by April 20, 2012. Though no longer required, the casing was excavated on April 24, 2012. As also required by the LMP, this shorted casing was monitored once per month, not to exceed 6 weeks, until it was repaired.

## **7.2 PE2: In Line Inspection and Rehabilitation Program**

Analysis of the UT ILI tool results revealed that wall laminations resulting in blisters are not an integrity concern with the Longhorn pipeline. Deformation tools were run in these segments prior to the UT tools. One hundred and two (102) rehabilitation and Probability of Exceedance (POE) digs were performed beginning in 2010, and were continued into 2011. Longhorn applies HCA remediation timeframes even to pipe segments outside of HCAs. All rehabilitation was conducted in the necessary timeframe.

MPL follows recent industry standards to ensure the quality of ILI runs, and uses conservative methods to re-calibrate ILI results when determining what ILI indications to dig. The ORA contractor performs a statistical analysis of the ILI data to identify any additional areas for physical inspection, beyond those that would normally be inspected, as an extra precaution. The ORA process provides a detailed, independent analysis of all ILI data. The schedule for recent ILIs has been driven by the mitigation commitments, and has not been altered by ORA technical analysis. This will change over time, as the mitigation commitment ILIs are accomplished.

MPL is evaluating a “spiral MFL” tool elsewhere on its system, which should be able to detect both longitudinal and circumferential defects at the same time. This technology may be applied to the Longhorn system for future inspections.

### 7.3 PE3: Key Risk Areas Identification and Assessment

The risk model is being maintained, and is updated with new data on a monthly basis. The tier-based segmentation of the pipeline has not been revised since the model was created but the HCA designations are updated per 195. The factors that affect the tier segmentation change rather slowly, so annual updates should not be required, but an update of the segmentation based on current population densities should be considered. It should be noted that the Longhorn system is regulated under the PHMSA pipeline integrity management regulations in 49 CFR 195.452, which includes requirements for the identification and management of High Consequence Areas, including populated areas. The populated area information and resulting pipeline integrity management programs are periodically updated as required by this regulation.

The risk model is also in the process of being updated to reflect the change in flow direction and change from refined products to crude oil that will occur at the completion of the Reversal Project.

### 7.4 PE4: Damage Prevention Program

In 2011, there were two line strikes, one near miss, one instance where digging was occurring without a One Call, and one instance of rectifier cables damaged by third party excavation. In the majority of these instances, the excavators did not communicate with Magellan or verbal agreements between the excavator and Magellan were not followed. In one instance (line hit at MP 40.88), Magellan sent the excavator a letter regarding the incident and the importance of following One Call laws and procedures. In response to the high incident of fencing issues in 2011, Magellan mailed a “fencing” postcard to over 13,000 recipients that make up the excavator, farming and other Magellan internal databases.

The 2011 Third Party Damage (TPD) Prevention Program Assessment did not mention the two line strikes that occurred in 2011 nor does it make any recommendations to prevent similar incidents in the future. The Incident Investigation for the MP 40.88 line strike has the following statement in the Lessons Learned section: “On 3rd party projects that have long construction periods, take defensive measures (i.e. fencing) to make unwanted/unauthorized encroachment activities more difficult.” The “Lessons Learned” for the Incident Investigation for the MP 414.98 line strike stated “When a third party is working next to Magellan’s ROW, have them install a safety fence between Magellan’s ROW and their work location.” A memo was sent to Longhorn Field Operations Personnel concerning this issue. Given the recurrence of this issue, MPL should consider issuing a Lessons Learned Bulletin and incorporating this into the formal Longhorn operating procedures.

Longhorn has committed to install and maintain a high number of pipeline markers. The aerial patrol program is well organized and executed, and surveillance occurs more frequently than required. Flights are conducted in both directions (up the pipeline one day, and back in the other



direction the next). That gives the aerial patrol observer the ability to spot potential issues from both perspectives on a regular basis. An operations person flies with the pilot annually to make sure the flight is taking the correct path.

Longhorn spends about 5 times more money per mile for ROW maintenance (\$1MM for 700 miles of pipe) than the average for MPL.

A program to coordinate all aerial patrol observations through Tulsa (as is the practice elsewhere in MPL), instead of being coordinated through the Austin field office was completed in 2011. This has improved management of the data, and allows automated identification of Tier 1, 2, and 3 areas. It also facilitates the identification of areas with shallow pipe and no-till agreements. All observations and their status are now tracked in the centralized computer system, and reports can easily be generated. In addition, aerial patrol observations are now immediately communicated to Operations personnel so that personnel can be dispatched to the location.

An aerial photo survey is conducted every 5 years to look for scouring of 13 water crossings. The last survey was conducted in 2010.

There are locations of shallow pipe in agricultural areas, and no-till agreements are obtained when possible for those areas, which give a financial incentive to farmers to not use the ROW for farming activities. COMs are reminded on an annual basis about the no-till agreements in their area, and they confirm and document that the land use has not changed. The agreements are renewed every 5 years. There are a total of 10 no-till agreements, and 3 areas where they have been pursued but not obtained. There were no new no-till agreements obtained in 2011. The revised aerial patrol reporting process includes a review for observations in areas of shallow pipe and / or no-till agreements.

MPL should also consider special programs for shallow pipe in active oil and gas development areas. One of the line strikes mentioned previously was due to drilling activity. The contractor, although told not to store drilling mud on the ROW, did store it there. Then, while moving the mud, the forklift sunk into the ground and contacted the pipe, damaging the coating. Examples of potential special programs in oil and gas development areas are the establishment of designated crossing areas, special signs and specific public awareness outreach.

Execution of the public awareness program for Longhorn was implemented as required by the LMP. An annual mailout was conducted for residents and other establishments within 2 miles of the pipeline in rural areas, and ¼ mile of the pipeline in metropolitan areas. A supplemental mailout was sent to all parties involved in unauthorized encroachments. Door-to-door visits were conducted at 1,786 locations adjacent to the ROW from Travis to El Paso counties. The program is scheduled to continue during the same time period in 2012 with households from Harris to Bastrop counties and Travis to El Paso counties. In 2012 Magellan plans to cover both areas in one year and then every other year thereafter. Response cards have been included in the mailouts since 2007. Each year the replies have decreased versus the previous year (310 in 2007, 81 in 2010), however there was a large increase in 2011 to 638 responses. The % of replies that state that they have seen or heard information about pipeline safety in the past year had remained



very consistent (about 55%), however, it dipped to 44% in 2011. Those who claim that they were aware of the need to call One Call before digging increased slightly from about 75% to 77%. A smaller % of respondents each year claim that they were aware of the Longhorn pipeline before they received the brochure (perhaps because those who were already aware of Longhorn had replied in prior years, not the current year). It is reassuring to note that each year a larger % of respondents claim to be aware of the “811” system, which is the nationwide number for One Calls, and that this % increased in 2011 to 46% over the previous year of 38%.

Longhorn COMs (Coordinators of Operations and Maintenance) participated in group emergency responder and excavator meetings, covering 100% of the pipeline mileage. There were an additional 118 meetings with emergency responders along the ROW. Over 2,300 emergency responders and public officials were targeted by fall and winter postcards on pipeline safety issues.

Longhorn continues to operate a school outreach program targeted at 4<sup>th</sup> and 5<sup>th</sup> grade students, but has had difficulty getting schools to participate. In the Austin area, 17 schools were targeted, 4 participated, reaching 481 students. In the Houston area, 5 schools participated, reaching 676 students.

Longhorn ran a safe digging and 811 radio ad in the Austin area and participated with a collaborative group on an 811 media day on 8/11/2011. This group sponsored an 811 ad during the Dallas Cowboys vs. Denver Broncos football game, materials on safe digging and 811 that were included on several news station web sites on 8/11/2011, and ads on Spanish radio stations. The farm store kiosk program was continued in 2011, and an effectiveness survey was conducted with store owners and managers. The results of the survey may be used to modify this program in the future. Longhorn also participates jointly with programs conducted by Dig-Tess, including the sponsorship of NASCAR driver Joey Logano.

## **7.5 PE5: Encroachment Procedures**

Operations personnel are keenly aware of the need to prevent unauthorized encroachments and to properly manage authorized encroachments. An encroachment agreement is executed for every authorized encroachment. MPL uses two different encroachment agreements: a “short form” that is used for routine activities (such as installing utility lines across the ROW), and a “long form” that is used for more complex situations such as land development. The land representative is informed of every encroachment agreement, and reviews them to ensure that they are appropriate. These are retained permanently in the TRACT land files.

There were a total of 76 encroachments in 2011, all of which were documented using the “short form” for encroachments. There were no unauthorized encroachments, as compared to 3 in 2009 and one in 2010. MPL gathers ROW near miss and unauthorized encroachment data in the Mitigation Plan Scorecarding & Performance Metrics report. Although unauthorized encroachments are not uncommon for any pipeline, near misses and unauthorized encroachments

reinforce the need for an active ROW patrol program, in addition to the public awareness programs.

## **7.6 PE6: Incident Investigation Program**

To promote awareness of hazards and to ensure “near misses” are identified, MPL uses a hazard / near miss (HNM) card (note that these operational “near misses” are not the same as the ROW “near misses” described in PE4). All operations employees are encouraged to complete these cards (a lot of HNM cards is better than just a few). There were 7 HNM reports for 2011, versus 6 in 2010.

The LPSIP requires that incident investigations be performed for accidents, incidents, repairs, and near misses (“close calls”). The Incident Data Report form (13-FORM-1301) includes checkboxes to identify the event as Minor, Serious, or Major. Longhorn did 13 Incident Investigations in 2011, versus 15 in 2010. Some of these were for non-operational events. None of the Incidents in 2011 were considered “serious”. The level of detail contained in the II reports has improved over prior years, partly due to a new process where 2 people in Tulsa review IIs as they are submitted and kick them back to the author if they contain insufficient information (instead of waiting for the next scheduled quarterly review). Note that IIs for the Longhorn system are reviewed on a monthly basis. In 2012, MPL sent several employees to formal Root Cause Analysis training, which addresses a prior audit concern.

Incident Investigations and Hazard / Near Miss reports are analyzed and Lessons Learned bulletins (see MC7) are generated if any lessons learned can be applied globally.

MPL conducts a quarterly review of all incident data with the VP of Operations; the Operations Directors; and the VP of Technical Services. The auditors did not investigate the level of detail or trending that is reported to management or the outputs that may come from these reviews.

MPL has an action item (AI) tracking process that tracks IIs, HNM cards, and SIP meeting action items. The AI tracking process excludes action items that are performed immediately. The Safety Specialists participate in Hazard Near Miss Action Item meetings with the Manager of Operations, Area Supervisors, Asset Integrity personnel, and the Compliance Coordinator. They modify the Action Items as needed and trend Hazard Near Misses company-wide.

## **7.7 PE7: Management of Change**

A new Management of Change tracking process is being used in Austin to ensure closeout of all MOCR items. In addition, MOCRs for the Reversal Project are tracked separately.

Longhorn performed two HAZOP analyses in 2011 for pre-construction of the Reversal Project, for the Crane Station and the Odessa Station. A Layer of Protection Analysis (LOPA) was also performed for the Odessa Station Reversal Project.

MPL's management of change process is described in SIP Element 11. The LMP requires that all documents and files affected by the change be identified and modified in a timely basis. Upon review of the 2011 completed MOCR's, the auditors found instances of incomplete supporting documentation for replacing O/S activity in TAS with ODS O/S application, for changing pressure relief setting, and for removing a pressurized lube system.

The LMP requires that all changes on the Longhorn system "be evaluated using an appropriate hazard analysis (HAZOP, what-if, etc.)". The MPL MOCR form includes a yes / no checkbox to indicate whether a Process Hazard Analysis is required, and MPL's procedures provide that the asset integrity engineer should determine the appropriate PHA methodology for change requests. MPL changed their SIP / PHA procedure in 2008 to specify that PHAs were required for all changes "on a Longhorn Pipeline System", and the PHA process was updated to provide two options: a what-if/checklist, or a full HAZOP. In most instances, when changes are small or minor, MPL is currently using the Facility Integrity Checklist as the primary method to perform PHA's.

The SIP requires that Pre-Startup Safety Reviews (PSSR's) occur prior to bringing new equipment into operation or prior to bringing modified equipment back online. The MOCR form includes a signature line in the MOCR Closure Approvals section that confirms whether a PSSR was completed.

#### **7.8 PE8: Depth of Cover Program**

The depth of cover program is tracked as part of the Asset Integrity (AI) report. The last depth of cover survey was conducted in 2007.

In-line inspections to-date have not identified any correlation between shallow pipe and excavation damage, which indicates that this threat is being adequately managed.

#### **7.9 PE9: Fatigue Analysis and Monitoring Program**

The fatigue analysis and monitoring program is conducted as part of the ORA, which is functioning as planned. The results of this program are described in the ORA report.

#### **7.10 PE10: Scenario Based Risk Mitigation Analysis**

The scenario based risk mitigation analysis (SBRMA) is conducted annually, after the results of the Annual Third Party Damage Prevention Program Assessment (ATPDPPA) and the results of the relative risk model are available. The SBRMA for the 2010 operating year was not performed as required in 2011, and will be performed in 2012 instead.



### **7.11 PE11: Incorrect Operations Mitigation**

MPL has found that operator error has been a significant contributing factor to incidents and near misses on the Longhorn system. Longhorn has taken steps to address that issue, and uses an incorrect operations (IO) tracking spreadsheet which is updated monthly and reviewed monthly. IOs include Abnormal Operating Conditions (AOCs), IIs, and Hazard / Near Miss (HNM) cards. There were 13 AOCs in 2011, as compared to 19 AOCs in 2010. Action Items are also reviewed monthly.

MPL does have an operations control center simulator specifically for LPP, which is used to train and to re-qualify board operators in the Tulsa control center. This helps to ensure that they can rapidly recognize and effectively respond to abnormal operating conditions on the Longhorn pipeline system.

### **7.12 PE12: System Integrity Plan Scorecarding and Performance Metrics Plan**

This element commits Longhorn to establish and track general program performance measures, specific programs performance measures, and to conduct an annual system integrity plan audit. These measures have been established and are being tracked as required, and the annual system integrity plan audit has been conducted each year as required. Longhorn has also established several other performance measures and tracking systems, including the Mitigation Plan Scorecarding & Performance Metrics report and incorrect operations scorecard. The scorecard metrics are reviewed monthly. Longhorn no longer tracks all calls to their 800 number, as many of these calls were not related to system integrity (i.e. job inquiries, etc.), and now only tracks integrity-related calls. The Longhorn website has been incorporated into the MPL website.

Longhorn system performance metrics are now contained in a “share drive” accessible to both Austin and Tulsa, which facilitates timely sharing of information and reduces double-entry of data. There were no unauthorized encroachments in 2011. There were 5 releases in 2011, three from facilities and two on the pipeline right-of-way. Only one, a stem leak at Warda Station, was reportable. See appendices 10.1 for a description of releases and other key metrics on the system in 2011.

## 8.0 Recommendations

While the LPSIP is being implemented effectively, there are several opportunities for continued improvement in the opinion of the auditors. These have been grouped into the following categories (in no particular order of importance):

### 8.1 Pipe Movement at El Paso Terminal

Since the 2008 audit (conducted in 2009), evidence of pipe movement in the racks at the El Paso terminal was noted. The 2009 audit (conducted in 2010) noted continued movement of pipes in the racks, and questioned whether this item had been adequately addressed. The auditor's site visit in 2011 and in 2012 identified additional pipe movement beyond the inspections in 2010 and 2009. This issue presents a potentially serious integrity threat to the piping and pump systems at the El Paso terminal. Magellan is aware of this situation, and has taken steps to address water hammer by installing check valves on the discharge of some pumps to address 'slack line conditions'. MPL also installed I-rod supports to prevent damage from pipe movement associated with thermal expansion while addressing the root causes of this issue. MPL has instituted a monitoring program which, until mid-2012, showed continued pipe movement at the racks. Tank and pump modifications were completed in 2012 and the monitoring program showed no pipe movement since May 2012.

### 8.2 Pump vibration at El Paso Terminal

The tank pump skid vibration issues at the El Paso terminal were resolved in 2012. The pump skid for tank 12 was modified in 2011 and vibration issues also resolved for the pump on tank 13. Magellan worked on full modifications to Tanks 6 & 7 and completed them in 2012. These modifications will provide a primary and backup tank for both gasoline and oil to the rack; and a primary tank for premium to the rack.

Once all this work is complete, Magellan should continue to evaluate the modifications needed on the remaining tanks to safely perform tank to tank and tank to rack transfers.

### 8.3 MOCR Process

The El Paso terminal operations have had the most operational changes in the past few years, and likewise have had the most deficiencies identified during these audits for compliance with the MOCR process. MPL / Longhorn should place additional emphasis on MOCR compliance at the terminal. Magellan is currently reviewing the MOCR process.

### 8.4 Damage Prevention

In 2011 there were two line strikes, one near miss, and one instance of a contractor not calling for line locates. The Incident Investigations of the two line strikes and the near miss all indicate that clear communication with third party excavators is not occurring. Verbal agreements were made with excavators about the scope of their work and communicating with Magellan prior to

excavation on the Magellan ROW. However, the contractors did not follow those verbal agreements and damages occurred. Magellan should have all agreements with excavators in writing and should increase monitoring of job sites near their ROW.

The Incident Investigations for the two line strikes both recommended fencing to delineate the ROW when third parties are working on or near the Longhorn ROW. Magellan should modify their procedures to include this recommendation.

The Third Party Damage Prevention Program Assessment addresses third party damages and incident investigations only if three (3) or more One Call violations occur within a 12-month period in a 25-mile pipeline segment. If this occurs, than an ILI tool that can detect TPD must be run.

Line strikes and near misses are a clear indicator that the TPD program can be improved. The TPD Prevention Program Assessment only mentioned one of the line strikes that occurred in 2011 and referred to it as a “One Call violation”. The second line strike at MP 414.98, the near miss (AC Grounding Project), and the One Call violation (hand digging without a One Call ticket) were not mentioned at all in the Assessment. The Incident Investigations for the two line strikes both mentioned a similar change that could be made to Magellan’s procedures when third parties are working on or near the Longhorn ROW. However there was no mention of this potential process improvement in the assessment. Magellan should include Incident Investigations for all line strikes, near misses, and One Call violations in their assessment of their TPD Prevention Program, and make relevant recommendations within the assessment.

In addition, a scoring process could be developed to identify one call tickets that may require more support than an “average” ticket – such as extended construction projects or those that parallel Longhorn for a substantial distance. Documentation of one calls could also be improved by including photos and written agreements with excavators.

MPL could also consider special programs for shallow pipe in active oil and gas development areas. One of the line strikes mentioned previously was due to drilling activity. The contractor, although told not to store drilling mud on the ROW, did store it there. Then, while moving the mud, the forklift sunk into the ground and contacted the pipe, damaging the coating. Magellan should consider special programs in oil and gas development areas, such as the establishment of designated crossing areas, special signs and specific public awareness outreach.

## **8.5 MOP Exceedances**

In 2011 there were three instances of maximum operating pressure (MOP) exceedances.

1. On February 8, 2011, the pressure exceeded MOP plus 10% at El Paso Terminal. Contributing to this error was the lack of an alarm in the Control Center due to an incorrect setting in SCADA. An Incident Investigation was performed and several action items taken to address the incident.
2. On February 15, 2011 there was a second instance of MOP exceedance at El Paso Terminal. There was no incident investigation for this exceedance. MPL stated that this was an exceedance for longer than 10 minutes during transitory or steady state conditions in a Tier I area, however it did not exceed MOP + 10%. The MOP exceedance occurred

because the setting for the thermal relief valve was set at the MOP (275 psig). It was subsequently reset to 250 psig.

3. On October 31, 2011, MOP was exceeded at Galena Park. A thermal relief valve set at 275 psig did not relieve until it reached 280 psig. No incident investigation was done for this exceedance. An MOCR was created to lower the settings on six thermal relief valves and this work was completed and the MOCR was closed on December 19, 2011.

Incident investigations should be conducted on all MOP exceedances to determine root cause and corrective actions identified to prevent future occurrences. This is especially important given the Advisory Bulletins recently issued by PHMSA on the importance of establishing maximum operating pressure.

### **8.6 Shorted casings**

PHMSA cited Magellan with regards to shorted casings. . The citation reads “Metallically shorted casings are addressed by Magellan Corrosion Control Procedures, 7.04-ADM-001, Section 2.99.4, which states that metallically shorted casings require actions when the casing potential is within 100 millivolts of the carrier pipe. Magellan’s annual surveys of pipe-to-soil and casing-to-soil readings show some casing-to-soil readings taken at the same test station or a nearby test station to be within 100 mV of the pipe-to-soil readings. According to Magellan records, testing performed by the Operator has confirmed that some of these casings are metallically shorted but actions have not been taken to achieve the electrical isolation required to comply with the requirements of 195.575. In addition, the Operator has not followed its procedures to clear the short or fill the casing annulus with dielectric material for each metallically shorted casing.”

Magellan procedures state that “Action shall be taken to clear the short (a) in Tier I areas within six months of development of the action plan; and (b) in Tier II and Tier III areas within three months of development of the action plan.” However, Magellan’s practice is to monitor the shorted casings until it is resolved rather than actually “clearing” the shorted casing within this timeframe requirement. MPL has requested a hearing with PHMSA to resolve this issue. MPL may need to modify its program, based upon the results of the hearing.

### **8.7 SIP Training**

MPL employees receive overview training on the SIP as part of the “on-boarding” training. This is an “awareness” level introduction to the various parts of the SIP. Employees continue to learn more about the specific sections of the SIP that are most relevant to their jobs during the course of their career – but there is currently no system to track that continuing development. We recommend that MPL develop a system to track and document the higher levels of knowledge and skills that employees obtain over time – especially as they relate to specific requirements for the Longhorn system. This will ensure that appropriate employees have a firm understanding of the SIP and how SIP requirements apply to their job, and also ensure that no important gaps in understanding exist.

## **9.0 Conclusions**

The SIP was effectively implemented in 2011, and served its function of managing risks on the Longhorn system. Personnel at all levels of the organization are aware of and committed to comply with the requirements of the SIP. Comprehensive programs are in place to manage risks on the pipeline system and to implement the commitments in the SIP. These programs are mature, and are being improved on a continual basis. Several recommendations for additional improvement have been identified for further consideration by Magellan.

## 10.0 Appendices

### 10.1 Summary of key metrics for 2011

Category	Measure	2011 Results
Incident Data	Releases in each Tier (DOT Reportable only)	Tier 1 = 1
		Tier 2 = 0
		Tier 3 = 0
	Releases in sensitive & hypersensitive areas (DOT Reportable only)	0
	Releases by cause (DOT Reportable only)	TPD = 0
		Corrosion = 1
		Design = 0
		Incorrect Operations = 0
	Releases by volume (BBL) (DOT Reportable only)	Tier 1 = 2.36
		Tier 2 = 0
Tier 3 = 0		
Near Misses	Tier 1 = 1	
	Tier 2 = 1	
	Tier 3 = 0	
Risk Awareness	Identification of new and/or previously unrecognized risks	1
	Number & type of projects completed that are not required by prescriptive code	7
Public Customer Service	Number of validated complaints on safety or environmental issues	1
	Number of landowner contacts related to pipeline safety and land use	88
Operator Resources and Innovation	Number of new technologies, alternative methodologies and innovative approaches to control risk	1
Damage Prevention Program	Number of third party damage incidents due to One-Call Process not being practiced (One-Call Violations)	1
Unauthorized Encroachments	Number of unauthorized encroachments	0
Facility Inspections	Number of facility inspections	7
Corrosion Management Plan – Smart Pig Results	Dents with any of the following: metal loss, corrosion, exceeds 6% of the outside diameter, or located on the longitudinal seam or girth weld	5

Remaining strength of the pipe results in a safe operating pressure that is less than the current MOP at the location of the anomaly using a suitable pressure calculating criterion (e.g. B31 G, modified B31 G, RSTRENG or LAPA)	4
Casing shorts with associated metal loss	0
Girth weld anomalies	0
Corrosion with 3" of either side and/or across girth welds	See ORA Report
Preferential corrosion of or along seam welds	See ORA Report
Gouges or grooves greater than 50% of nominal wall thickness	0
Cracks located in the pipe body, girth weld, and longitudinal seam that are determined to be injurious to the integrity of the pipe	See ORA Report



Leading Measure	Definition	Standard	Score
Number of Releases	Number of Releases from company assets or projects that are managed by area employees in quantities exceeding 1 Gallon.	Zero (0)	4
Number of Recordable Releases	Number of DOT Reportable releases experienced on the Longhorn system.	Zero (0)	1
Number of Line Hits	Number of contacts with pipeline by first, second or third parties. Contact with pipeline includes coating contact or damage.	Zero (0)	2
Number of Near Misses	Number of events that in slightly different circumstances could have resulted in damage to the pipeline by first, second or third parties.	Zero (0)	4
Number of Markers Repaired or Replaced		Actual Number	298
Number of Unauthorized Encroachments	Number of activities that resulted in a structure being placed on the ROW that was not authorized by Longhorn Pipeline.	Zero (0)	0
Number of Emergency Drills Conducted			39
Number of Facility Inspections Completed			7



## 10.2 Key documents reviewed for the 2011 SIP self-audit

### 2011 LPSIP Self Audit Backup Docs - Appendices

#	Doc. Name
	Magellan Organization Chart
	2011 Mitigation Plan Scorecarding & Performance Metrics
	2011 Mitigation Plan - Commitment Implementation Status Report
	2010 Self Audit Recommendations & Action Plan
	Incorrect Operations Mitigation Report & Data
	Hazard Near Miss (HNM) - Closed List
	Hazard Near Miss (HNM) - Open/New List
	Closed Action Items (AI)
	Open Action Items (AI)
	Abnormal Operating Condition (AOC) Report
	Incident Investigation Reports
	Summary Report of 2010 ORA Developments
	Summary of ILI results and planned inspections
	Asset Integrity Report - 2011
	Public Awareness Summary Report - 2011
	Management of Change Data, including <ul style="list-style-type: none"><li>- Example MOCR Reports</li><li>- Open MOCR list</li><li>- Closed MOCR list</li></ul>
	Encroachment Report Date - 2011
	Valve Inspection Report data - 2011
	Corrosion Control Records – 2011, including: <ul style="list-style-type: none"><li>- MPL Longhorn Rectifier Maintenance Activity Report</li><li>- MPL Longhorn Test Point Exception Report</li><li>- Atmospheric Maintenance Report</li><li>- Close Interval Survey Results for Tier III</li></ul>
	PHMSA / Longhorn correspondence - 2011
	2011 Third Party Damage Prevention Program (TPDPP) Annual Assessment
	System Integrity Plan - 2011

Note: The auditors have performed this audit for 3 consecutive years, and also relied upon program descriptions and documentation from prior years when they also apply to this year's audit. Those documents are described in our prior audit reports.



### 10.3 Personnel Interviewed

#### Austin Interviews:

Jim Griffin – Landman  
Darcy Madsen – Field Records, Compliance Coordinator  
Randy Hermes – Area Supervisor – Longhorn East  
Justin Broadus – Tech I

#### Tulsa Interviews

Melanie Little – VP Operations  
Joe Strief - Director of Operations  
Chad Cole – Supervisor - Longhorn console  
Mike Pearson – VP Technical Services  
Jeff Morton – Supervisor, Facility Integrity Engineering  
Jamie Graves – Facility Integrity Engineer  
Rick Wooldridge – Mgr Asset Integrity (Corrosion & Tanks)  
Clyde Clausen – Mgr Asset Integrity (Pipeline)  
Linh Tran – Data Analysis / Risk Model  
Dyan Gillean - Supervisor One Call  
Bob Jackson –Manager of Engineering and Construction  
Jason Smith – Manager Asset Integrity Engineering  
Greg Peck - Safety

#### El Paso Interviews

Cole Ballard – Area Supervisor - El Paso Area  
Tommy Adams – Area Supervisor - Crane / Odessa Area  
Roy Van Tine – Operations Supervisor - El Paso  
Brad Martin – El Paso Technician  
Greg Melton – El Paso COM  
David Licon – Corrosion Tech  
Brad Martin – El Paso Senior Tech

#### Houston Interviews

Ed Fuchs –Manager Texas Operations  
Rusty Holman – Area Supervisor – East Houston



## 10.4 Statements of Qualifications for the Auditors

### W.R. (Bill) Byrd, P.E. President

#### Executive Summary

As founder and principal of RCP, Mr. Byrd enjoys a solid reputation for working with the public, corporate executives, legal representatives, and regulatory agencies to resolve complex regulatory, integrity management, safety, and compliance management issues. He combines exceptional analytical and communication skills with a broad background in engineering, operations, management, economics, and regulatory affairs, yielding excellent professional judgment and capabilities that can be applied to intractable problems. He is a widely respected public speaker, and is routinely called upon to make presentations to industry associations and other groups at the national level. He is a licensed Professional Engineer in five states, and graduated with honors from Georgia Institute of Technology for both his M.S. and B.S. in Mechanical Engineering.

#### Accomplishments/Experience

- Serving as the consulting expert to the API / AOPL Pipeline Performance Excellence Team, a permanent team composed of pipeline executives dedicated to improving the safety of the liquid transmission pipeline industry.
- Serving on the INGAA Foundation with other pipeline company and contractor executives to identify, prioritize, and fund research projects for the gas transmission industry.
- Serving as a consulting expert during the first criminal prosecution under the Pipeline Safety Act.
- Serving as an expert witness during the first class action lawsuit brought against a pipeline company under the citizen suit provisions of the Pipeline Safety Act.
- Serving as an expert witness / consulting expert on several other pipeline accidents and lawsuits, including those of national significance.
- Chairing the Offshore Corrosion Surveillance Subcommittee for a major pipeline company.
- Leading the development and implementation of a corrosion control strategy for oil and gas operations on the North Slope of Alaska in response to congressional investigations.
- Leading the development of a multi-skill progression program for a major pipeline company with a unionized workforce.
- Developing a new approach for H<sub>2</sub>S contingency planning in large sour oil and gas production areas, and co-authored two papers based on that work at the first annual EPA/SPE Joint Exploration and Production Environmental Conference. This revised planning approach has since been adopted throughout the oil and gas industry for use in production operations.
- Developing solutions for produced water toxicity issues on the Outer Continental Shelf, NORM sampling and testing procedures for oil field wastes, and asbestos exposure issues.

#### Associations/Affiliations

- American Gas Association
- American Petroleum Institute
- American Society of Safety Engineers
- American Society of Mechanical Engineers
- Interstate Natural Gas Association of America Foundation
- Texas Gas Association
- Houston Pipeliners Association
- Gulf Coast Environmental Affairs Group



**Chris Foley, CSP**  
**Vice President, Consulting Services**

**Executive Summary**

Mr. Foley has extensive engineering and senior management experience in a broad range of industrial sectors, including energy services, power generation, pulp and paper, and petrochemical. He has a strong background in operations & maintenance, project management, systems safety engineering, environmental compliance, and construction engineering. Board Certified Safety Professional and B.S., Industrial Engineering – Texas A&M University.

**Accomplishments/Experience**

In his 18 years of industrial experience, Mr. Foley has developed comprehensive regulatory compliance programs for pipelines, air, water, waste, emergency response, hazardous materials and processes, and occupational safety management for Fortune 500 companies. Specific accomplishments include:

- Directed due diligence efforts for several crude and HVL pipeline acquisitions. These efforts included comprehensive phase I environmental assessments, jurisdictional determination reviews, permit transfers, remediation project assessments, integrity management assessments, operator qualification transition, and regulatory program development, including O&M, Integrity Management, Operator Qualification, Oil Spill Response Plan, One call, Public Awareness, and Environmental, Health & Safety Plans.
- Conducted a comprehensive permit review of Longhorn Pipeline Partners, Houston Ship Channel to El Paso refined products pipeline. This included all federal, state, and local jurisdictions for the construction, start-up, and on-going operations of the refined products pipeline, various pump stations, and breakout terminals.
- Managed all aspects of EHS compliance for thirteen combined cycle power generation facilities in the Western Region of the U.S. This included acquisition and compliance monitoring for air and wastewater permits, performing comprehensive environmental due diligence reviews of recently acquired facilities, and served as lead point of contact for all agency representatives for a wide variety of regulatory issues.
- Developed EHS Management Tools utilizing web-based communication tools, for audit tracking.
- Coordinated Process Safety Management and Risk Management Plan compliance for all highly hazardous production processes within a large pulp & paper facility and lead several PSM/RMP compliance audit teams at various facilities throughout the country.
- Played a key role with the East Harris County Manufacturers Association, planning and hosting joint communication forums between local chemical industries and community members which presented each facility's chemical release modeling scenarios, accident prevention measures, emergency response capabilities, and community alert notification systems.
- Lead Project Engineer during various petrochemical production facility expansion and shutdown maintenance projects, and new LNG production facility start-up project.

**Associations/Affiliations**

- American Gas Association
- American Petroleum Institute
- Texas Oil & Gas Association
- Southern Gas Association
- Texas Gas Association
- ANSI Gas Piping Technical Committee



**Deborah J. Brunt, P.E.**  
**Executive Consultant**

**Executive Summary**

Deborah Brunt has 25+ years of experience in natural gas utility operations and engineering. Her expertise is focused on gas distribution and transmission engineering, operations, and compliance with DOT Part 192 regulations, and MAOP. She is experienced in testifying before the New Mexico Public Regulation Commission (NMPRC), National Labor Relations Board (NLRB), and representing the Company to the community and local governments.

**Accomplishments/Experience**

In Ms. Brunt's career in the natural gas industry, she has held the positions of: Director of Operations, Engineering, Gas Engineering & DOT compliance; member of a gas asset sale transition team; and manager for various operations functions. Some of her accomplishments in these roles, and as a Distribution Engineer, include:

- Directed/coordinated measurement, compression operations, environmental, right-of-way and GIS functions for gas transmission and distribution systems throughout New Mexico.
- Directed/coordinated engineering functions for gas transmission and distribution systems throughout New Mexico.
- Directed/coordinated the operation, maintenance, and construction of electric and gas distribution systems for Santa Fe, Las Vegas, Espanola and Taos, NM.
- Project management for new SCADA system installation.
- Worked on preparation of Descriptive Memorandum to describe assets to potential buyers of natural gas assets of Company. Assisted in presentations to potential buyers, prepared written responses to questions about the gas assets and provided tours of facilities. Once buyer was selected, work shifted to separating gas functions from electric functions, identifying all needs for stand-up gas-only company, and planning for physical moves.

**Education**

Bachelor of Science – Mechanical Engineer, Oregon State University, Corvallis, OR, 1986

- B.S. Mechanical Engineering with Honors
- Tau Beta Pi Engineering Honor Society
- Pi Tau Sigma Mechanical Engineering Honor Society

**Professional Awards and Accomplishments**

- Registered Professional Engineer, New Mexico (#11369), 1991
- YWCA “Woman on the Move” Award, 1992
- Society of Women Engineers “Distinguished New Engineer” Award, 1996
- New Mexico Society of Professional Engineers “Engineer of the Year” Award, 2003