PHMSA

Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **122060** Status: **Complete**

From Date: **06/16/2008** To Date: **11/16/2008**

AFO Total: **96.0**
Non-AFO Total: **.0**
ActivityTotal Days: **96.0**

Compliance Registry	
CPF	Sent to CR

Lead Person: **SHIEH, HANS**

Person Region: **3 - CENTRAL**

Added By: **HANS SHIEH**
Date Added: **06/23/2008**

Changed By: **HANS SHIEH**
Date Changed: **11/03/2009**

Operator /Units

Operator: 32334 TC OIL PIPELINE OPERATIONS INC **Exec:** VERN MEIER VICE PRESIDENT, FIELD OPERATIONS

Activation Date: 05/13/2008 **Deactivation Date:** **Status:** Active **Region:** 4 - Southwest

1 Unit(s)

Unit ID	Name	Units Region	Status	Pipeline Type	Jurisdiction	Insp Plan
72676	Keystone Mainline #1 (MP0.00 to MP310.70)	3 - Central	Active	INTERSTATE LIQUID	FEDERAL	Yes

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
66349		BAUMAN, GERY M	06/16/2008	06/20/2008	INSPECTION	5.0	Y	3 - CENTRAL
		Comments: Conducted a construction inspection of Keystone's Spread 2. Michels is the contractor.						
66822		BAUMAN, GERY M	06/30/2008	07/03/2008	INSPECTION	4.0	Y	3 - CENTRAL
		Comments: Conducted a construction inspection of Spread 1.						
67125		CONTRACTOR, CE	07/21/2008	07/25/2008	INSPECTION	5.0	Y	3 - CENTRAL
		Comments: Mark Spann of ORNL went to Spread 2 to conduct a construction inspection for us.						
67126		CONTRACTOR, CE	08/04/2008	08/08/2008	INSPECTION	5.0	Y	3 - CENTRAL
		Comments: Mark Spann or ORNL conducted a construction inspection of Spread 2 for us.						
67127		CONTRACTOR, CE	08/18/2008	08/22/2008	INSPECTION	5.0	Y	3 - CENTRAL
		Comments: Mark Spann of ORNL conducted the construction inspection of Spread 2 for us.						
67425		CONTRACTOR, CE	09/07/2008	09/11/2008	INSPECTION	5.0	Y	3 - CENTRAL
		Comments: M. Spann conducted the construction inspection of Spread 1A.						

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **122060** Status: **Complete**

From Date: **06/16/2008** To Date: **11/16/2008**

AFO Total: **96.0**
Non-AFO Total: **.0**
ActivityTotal Days: **96.0**

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
67957		CONTRACTOR, CE	09/22/2008	09/26/2008	INSPECTION	5.0	Y	3 - CENTRAL
	Comments: M. Spann conducted a construction inspection of Spread 1 this week.							
66350		HODILL, GABE	06/16/2008	06/20/2008	INSPECTION	5.0	Y	3 - CENTRAL
	Comments: Conducted construction inspection of Keystone's spread 2. Michel's is the contractor.							
67797		HODILL, GABE	07/14/2008	07/18/2008	INSPECTION	5.0	Y	3 - CENTRAL
66351		LEMMERMAN, DARREN	06/16/2008	06/20/2008	INSPECTION	5.0	Y	3 - CENTRAL
	Comments: Conducted a construction inspection of Keystone's Spread 2. Michels was the contractor.							
66476		LEMMERMAN, DARREN	07/28/2008	08/01/2008	INSPECTION	5.0	Y	3 - CENTRAL
66477		LEMMERMAN, DARREN	08/13/2008	08/15/2008	INSPECTION	3.0	Y	3 - CENTRAL
66478		LEMMERMAN, DARREN	09/15/2008	09/19/2008	INSPECTION	5.0	Y	3 - CENTRAL
66348	Y	SHIEH, HANS	06/16/2008	06/20/2008	INSPECTION	5.0	Y	3 - CENTRAL
	Comments: Conducted a construction inspection of Keystone in Valley City, ND. This is spread 2 and the contractor is Michels.							
66809	Y	SHIEH, HANS	07/21/2008	07/25/2008	INSPECTION	5.0	Y	3 - CENTRAL
	Comments: Conducted construction inspection of Spread 2 on 7/22, and Spread 1 on 7/23-24/08							
67956	Y	SHIEH, HANS	08/26/2008	09/05/2008	INSPECTION	9.0	Y	3 - CENTRAL
	Comments: Conducted a construction inspection of Spread 1 during the week of 8/26 and Spread 2 during the week of 9/1.							
67955	Y	SHIEH, HANS	10/06/2008	10/17/2008	INSPECTION	10.0	Y	3 - CENTRAL
	Comments: Conducted a construction inspection of Spread 1 during the week of 10/13 and Spread 2 during the week of 10/20.							
68114	Y	SHIEH, HANS	11/12/2008	11/16/2008	INSPECTION	5.0	Y	3 - CENTRAL
	Comments: Went to Spread 2 to conduct the construction inspection.							

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **122060** Status: **Complete**

From Date: **06/16/2008** To Date: **11/16/2008**

AFO Total:	**96.0**
Non-AFO Total:	**.0**
ActivityTotal Days:	**96.0**

Compliance Registry	
CPF	Sent to CR

Letters Sent

Item #	CPF Number	Primary Reg	Secondary Reg	Result	Ls Date	Nature	Enforce ID	Case Status

Activity Comments

H. Shieh, G. Hodill, G. Bauman, D. Lemmerman, and Mark Spann (ORNL) conducted construction inspections of Spreads 1 & 2 during this year.

Portion Of Unit Inspected

The inspection covered spreads 1 and 2 in North and South Dakota.

Inspection Result

Issues were identified throughout the year. Keystone addressed most issues in a timely manner. See construction file for exit interviews and Keystone responses.

Inspection Summary

Construction inspections were done on Spreads 1 and 2.

Integrated Inspection

No Integrated Inspection

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **123404** Status: **Complete**

From Date: **01/12/2009** To Date: **10/30/2009**

AFO Total: **47.0**
Non-AFO Total: **.0**
ActivityTotal Days: **47.0**

Compliance Registry	
CPF	Sent to CR

Lead Person: **SHIEH, HANS**

Person Region: **3 - CENTRAL**

Added By: **HANS SHIEH**
Date Added: **01/21/2009**

Changed By: **HANS SHIEH**
Date Changed: **04/03/2014**

Operator /Units

Operator: 32334 TC OIL PIPELINE OPERATIONS INC **Exec:** VERN MEIER VICE PRESIDENT, FIELD OPERATIONS

Activation Date: 05/13/2008 **Deactivation Date:** **Status:** Active **Region:** 4 - Southwest

1 Unit(s)

Unit ID	Name	Units Region	Status	Pipeline Type	Jurisdiction	Insp Plan
72676	Keystone Mainline #1 (MP0.00 to MP310.70)	3 - Central	Active	INTERSTATE LIQUID	FEDERAL	Yes

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
73082		BAUMAN, GERY M	06/15/2009	06/19/2009	INSPECTION	5.0	Y	3 - CENTRAL
	Comments:	G. Bauman and M. Kieba conducted an inspection of Spread 3B out of Aberdeen, SD. The issues and concerns noted by Gery ranged from coating anomalies not being repaired to bolts causing coating damage. Additionally, a joint of pipe was found with a three inch section where the wall of the pipe was measured to be 0.356". Gery also inquired about the CP of the line that had been in the ground for almost a year, and line markers to help prevent any possible third party damage.						
69348		CONTRACTOR, CE	01/12/2009	01/15/2009	INSPECTION	4.0	Y	3 - CENTRAL
	Comments:	Dan Mobely of ORNL went to Spread 2 and reviewed the NDT records for the tie-ins.						
73233		CONTRACTOR, CE	07/06/2009	07/10/2009	INSPECTION	5.0	Y	3 - CENTRAL
	Comments:	Mark Spann conducted the inspection of Spread 3B. His primary concern was the need for clarification on jeep test procedure to ensure the jeep is tested (or calibrated) using the same grounding method as will be used when performing the actual jeeping. Second to that would be the lack of understanding of why welding preheat is necessary. Most welders and even some inspectors do not understand the significance of pre-heat and delayed hydrogen cracking. Most believe if you preheat above the minimum you are good to go, without recognizing the potential for the pipe to cool below the preheat temp before the welder gets to the bottom of the joint. In the summer time that is not a significant problem, but in the winter time it could be. Every observation that was made, the preheats were being checked immediately prior to welding, but were never checked again during the pass.						

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **123404** Status: **Complete**

From Date: **01/12/2009** To Date: **10/30/2009**

AFO Total:	**47.0**
Non-AFO Total:	**.0**
ActivityTotal Days:	**47.0**

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
76400		CONTRACTOR, CE	09/08/2009	09/12/2009	INSPECTION	5.0	Y	3 - CENTRAL

Comments: K. Calfee of ORNL conducted an inspection of Spread 3B. His concerns were noted as follows:

1. There is no one checking the coating thickness when repairs are made when pre-jeeping and at lowering in.
2. The tie in welding repair rate is higher than expected. This is being addressed through personnel changes and increased visual inspection.
3. The welding bands are still damaging the pipe coating. These areas are sand blaster and coated. This was reported in the Exit Interview for the 7/20-7-24-09 visit.
4. The 7-24-09 Exit Interview noted pipe coating damage from the bending process. We observed none.
5. The 7-24-09 Exit Interview noted jeeps not corrected after lowering in. We observed none.

76945		CONTRACTOR, CE	09/28/2009	10/02/2009	INSPECTION	5.0	Y	3 - CENTRAL

Comments: Mark Spann conducted the inspection of Spread 3B in Spencer, SD. No issues were noted, other than the strapping down of grounds in a few places.

77344		CONTRACTOR, CE	10/26/2009	10/30/2009	INSPECTION	5.0	Y	3 - CENTRAL

Comments: D. Kyle from ORNL conducted an NDT audit of Spread 3B. No concerns were noted from his review.

69674		LEMMERMAN, DARREN	01/20/2009	01/22/2009	INSPECTION	3.0	Y	3 - CENTRAL

Comments: Keystone Construction

Most activities observed were performed per standards, the following items are notable.

1- During the new implementation of the induction coil, pipe pre-heater on January 21, 2009 it was noted that the crew was checking the heating progress of the induction coil with a temp stick. The wax based temp sticks contaminated the blasted surface and will case bonding issues. Temp guns could not be used accurately, because the surface area being heated was covered by the coil with only small narrow areas of access. A thermal couple device was implemented after the first two joints where completed. The use of the induction coil and thermal couple seemed to really work well and the coating crew was very happy with the process and progress.

2- There are still some issues with maintaining heat by some welding teams while most did it correctly. This was discussed with them, however it will need to be watched closely by the pipeline inspectors to assure compliance. With the cold temps the pipe cooled quickly when activity stopped and some where not testing it again prior to commencing additional welding.

76946		LEMMERMAN, DARREN	07/20/2009	07/23/2009	INSPECTION	4.0	Y	3 - CENTRAL

Comments: Keystone Construction -D. Lemmerman conducted the inspection of Spread 3B in Spencer, SD. The issues noted were as

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **123404** Status: **Complete**

From Date: **01/12/2009** To Date: **10/30/2009**

AFO Total:	**47.0**
Non-AFO Total:	**.0**
ActivityTotal Days:	**47.0**

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
76946		**LEMMERMAN, DARREN**	**07/20/2009**	**07/23/2009**	**INSPECTION**	**4.0**	**Y**	**3 - CENTRAL**

Comments: follows:

1) The tie-in at 177th St. was observed. The UEI inspector was not enforcing the requirement of grinding the long seam back for tie-in welds. KPP 10.2 requires 2¿ of long seam to be ground back on both the inside and outside of pipe before welding. Review showed that this was not consistently done.

2) The tie-in at 178th St. was observed. The UEI inspector was not enforcing the securely fasten the ground to the pipe requirement. While present the ground slid off of the pipe during the welding process. However, no arc burns where identified as a result. KPP 10.6 requires grounds to be secured to the pipe by means other than by welding.

77201		**LEMMERMAN, DARREN**	**08/24/2009**	**08/28/2009**	**INSPECTION**	**5.0**	**Y**	**3 - CENTRAL**

Comments: Keystone Spread 4b
Issues ¿

The welding grounds where not being secured on the firing line, pipe gang or most tie-in welders. Welders were observed securing their grounds following correction.

The use of hand worked sand paper for preparing holidays for coating repairs was inadequate. The coating was lightly scratched rather than feathered for application.

Once the holiday was feathered for repair a preheat was applied by direct torch contact to accelerate the curing time. The flame residue was allowed to contaminate the previously prepared surface and then it was coated over.

The use of a 60 grit metal disk grinder rather than 60 grit sand paper was used for preparing the surface of the pipe for coating repairs. They where going to order the sandpaper disks.

Accelerated preheat has been used in both repairs and application. The procedures require a heat range of 150F to 170F. Observations for application where 200F while repairs where observed as high as 263F.

Air bubbles in two part potentially has been causing excess jeeping of girth weld coatings. A different mixing auger was used to minimize entrapment of air in product.

The UEI inspector and repair welder where found to be unfamiliar with Low H rod procedures.

The procedures call for a utility knife of a specific size to be used for performing the coating V notch adhesion test. The coating inspector used a lock blade knife for the inspection. .....

69347	**Y**	**SHIEH, HANS**	**01/12/2009**	**01/17/2009**	**INSPECTION**	**6.0**	**Y**	**3 - CENTRAL**

Comments:

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **123404** Status: **Complete**

From Date: **01/12/2009** To Date: **10/30/2009**

AFO Total:	**47.0**
Non-AFO Total:	**.0**
ActivityTotal Days:	**47.0**

Compliance Registry

CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
69347	**Y**	**SHIEH, HANS**	**01/12/2009**	**01/17/2009**	**INSPECTION**	**6.0**	**Y**	**3 - CENTRAL**

Comments: Met with our ORNL auditor to review NDT's of tie-in welds. Also visited the pipe gang and observed the manual welding of the mainline.

Letters Sent

Item #	CPF Number	Primary Reg	Secondary Reg	Result	Ls Date	Nature	Enforce ID	Case Status

Activity Comments

This activity ws created to document the construction inspection time.

Portion Of Unit Inspected

The enitre unit was inspected.

Inspection Result

Issues were identified throughout the year. Keystone addressed most issues in a timely manner. See construction file for exit interviews and Keystone responses.

Inspection Summary

Construction inspections were done on Spreads 1 and 2.

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **123404** Status: **Complete**

From Date: **01/12/2009** To Date: **10/30/2009**

AFO Total:	**47.0**
Non-AFO Total:	**.0**
ActivityTotal Days:	**47.0**

Compliance Registry	
CPF	Sent to CR

Integrated Inspection

No Integrated Inspection

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **126896** Status: **Complete**

From Date: **10/09/2009** To Date: **10/22/2010**

AFO Total:	**7.0**
Non-AFO Total:	**.8**
ActivityTotal Days:	**7.8**

Compliance Registry	
CPF	Sent to CR

Lead Person: **SHIEH, HANS**

Person Region: **3 - CENTRAL**

Added By: **HANS SHIEH**
Date Added: **10/02/2009**

Changed By: **HANS SHIEH**
Date Changed: **04/03/2014**

Operator /Units

Operator: 32334 TC OIL PIPELINE OPERATIONS INC **Exec:** VERN MEIER VICE PRESIDENT, FIELD OPERATIONS

Activation Date: 05/13/2008 **Deactivation Date:** **Status:** Active **Region:** 4 - Southwest

1 Unit(s)

Unit ID	Name	Units Region	Status	Pipeline Type	Jurisdiction	Insp Plan
72676	**Keystone Mainline #1 (MP0.00 to MP310.70)**	**3 - Central**	**Active**	**INTERSTATE LIQUID**	**FEDERAL**	**Yes**

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
77178		**GULSTAD, RICK**	**10/19/2009**	**10/22/2009**	**INSPECTION**	**4.0**	**Y**	**3 - CENTRAL**
	Comments: Inspected tie-ins and block valve sites in addition to witnessing a hydrostatic test section on Spread 3B.							
88014		**GULSTAD, RICK**	**10/20/2010**	**10/22/2010**	**INSPECTION**	**3.0**	**Y**	**3 - CENTRAL**
	Comments: Inspection of excavation of the pipeline following construction and hydrotesting to look for pipe expansion east of Mitchell, SD.							
76764		**ROBERSON, GENE**	**10/09/2009**	**10/09/2009**	**INSPECTION**	**.8**		**4 - SOUTHWEST**
	Comments: Exova Materials Lab to view Weld Repair failure for Central Region							
76602	**Y**	**SHIEH, HANS**			**INSPECTION**		**Y**	**3 - CENTRAL**

Letters Sent

Item #	CPF Number	Primary Reg	Secondary Reg	Result	Ls Date	Nature	Enforce ID	Case Status

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **126896** Status: **Complete**

From Date: **10/09/2009** To Date: **10/22/2010**

AFO Total:	**7.0**
Non-AFO Total:	**.8**
ActivityTotal Days:	**7.8**

Compliance Registry	
CPF	Sent to CR

Letters Sent

Activity Comments

This is the investigation of TC's hydrotest failure at MP 334 from Spread 3B.

Portion Of Unit Inspected

No Portion Of Unit Inspected Comments

Inspection Result

No Inspection Result Comments

Inspection Summary

No Inspection Summary

Integrated Inspection

No Integrated Inspection

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2016-0093_000010

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **124953** Status: **Complete**

From Date: **04/23/2009** To Date: **11/06/2009**

AFO Total: **96.0**
Non-AFO Total: **.0**
ActivityTotal Days: **96.0**

Compliance Registry	
CPF	Sent to CR

Lead Person: **SHIEH, HANS**

Person Region: **3 - CENTRAL**

Added By: **HANS SHIEH**
Date Added: **04/24/2009**

Changed By: **HANS SHIEH**
Date Changed: **04/03/2014**

Operator /Units

Operator: 32334 TC OIL PIPELINE OPERATIONS INC **Exec:** VERN MEIER VICE PRESIDENT, FIELD OPERATIONS

Activation Date: 05/13/2008 **Deactivation Date:** **Status:** Active **Region:** 4 - Southwest

1 Unit(s)

Unit ID	Name	Units Region	Status	Pipeline Type	Jurisdiction	Insp Plan
72678	**Keystone Mainline #3 (MP639.50 to MP1081.60)**	**3 - Central**	**Active**	**INTERSTATE LIQUID**	**FEDERAL**	**Yes**

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
72900		CONTRACTOR, CE	06/08/2009	06/12/2009	INSPECTION	5.0	Y	3 - CENTRAL
		Comments: Mark Spann conducted a construction inspection of Spread 8 in Troy, MO. No issues were noted during this inspection.						
73081		CONTRACTOR, CE	06/22/2009	06/26/2009	INSPECTION	5.0	Y	3 - CENTRAL
		Comments: Kent Calfee of ORNL conducted the construction inspection of Spread 6B out of Hiawatha, KS. The concerns he had were the bending machine pads scuffing the pipe coating and the pipe falling in the ditch.						
73231		CONTRACTOR, CE	06/22/2009	06/26/2009	INSPECTION	5.0	Y	3 - CENTRAL
		Comments: Mark Spann or ORNL conducted the inspection of Spread 8B. His concern was the calibration of the Jeep. Preliminary discussions with the Coating Inspectors revealed that they had been given directions on how to calibrate the jeeps, but that they had no written procedure. He called Tom McMaster and learned that a procedure had been written and was being distributed. After reading the procedure, h believed Step 2 should be clarified to assure that the Jeep is calibrated using the grounding method that will be used when checking for holidays. Step 2 says, "Ensure the holiday detector is well grounded" and gives three appropriate ways for grounding. What it does not say is that it is essential to calibrate the jeep using the same grounding method that will be used to check the pipe. Calibrating the jeep with it grounded directly to the pipe, then checking for holidays by dragging the jeep grounding tail on the ground will not induce the required voltage across the coating. I voiced my concerns via telephone to Steve Zurbuchen.						
76944		CONTRACTOR, CE	08/17/2009	08/21/2009	INSPECTION	5.0	Y	3 - CENTRAL
		Comments: Mark Spann conducted the inspection of Spread 8B2 in Alton, IL. No issues or concerns were noted.						

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **124953** Status: **Complete**

From Date: **04/23/2009** To Date: **11/06/2009**

AFO Total: **96.0**
Non-AFO Total: **.0**
ActivityTotal Days: **96.0**

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
76944		CONTRACTOR, CE	08/17/2009	08/21/2009	INSPECTION	5.0	Y	3 - CENTRAL
76943		CONTRACTOR, CE	10/05/2009	10/09/2009	INSPECTION	5.0	Y	3 - CENTRAL

Comments: Kent Calfee conducted the inspection of Spread 7B in Carrollton, MO. The issues he noted were as follows:

1. There has been a problem with cracked with welds on this spread which is well known to the personnel involved. The problem got worse with twenty cracks the last seven working days. The mainline welded out on Wednesday, October 7, 2009.
2. I had raised the concern on Spread 3B of no one jeeping after coating repair at lowering in. The personnel on this spread are jeeping after repair at lowering in and also checking the hardness.

These notes were not forwarded to Keystone, as they already noted the issues from previous inspections.

77019		CONTRACTOR, CE	10/19/2009	10/23/2009	INSPECTION	5.0	Y	3 - CENTRAL

Comments: Kent Calfee conducted the inspection of Spread 8B2. No concerns or issues were noted during the inspection.

77345		CONTRACTOR, CE	10/26/2009	10/30/2009	INSPECTION	5.0	Y	3 - CENTRAL

Comments: M. Spann conducted the inspection of Spread 8B1. There was not much work being done because of rain. He noted no concerns this week.

77588		CONTRACTOR, CE	11/02/2009	11/06/2009	INSPECTION	5.0	Y	3 - CENTRAL

Comments: Rory Stooksbury of ORNL conducted the NDT audit of the NDT records of Spread 7B.

76523		GULSTAD, RICK	09/14/2009	09/25/2009	INSPECTION	11.0	Y	3 - CENTRAL

Comments: Exit Interview: 9/19/2009
Keystone Crude Oil Pipeline
Spread 8B1 - Sheehan Contractor

Observations:

The following were discussed with the Spread 8B1 RCS and Sr. Welding inspection

1) It was noted that a majority of the welding cap pass buttons at the 12 o¿clock position were being ground down with a grinder to be flush with the surrounding girth weld cap. An explanation was presented that this was being done to allow better evaluation of radiographic film. Many of cap buttons were not being ground smooth and were left in a condition with sharp edges. During the week the Sheehan welding foreman addressed the issue with the firing line welders and by the end of the week the cap buttons appeared to be a lot smoother with minimal sharp edges to allow better coating penetration.

2) Many indications of arc burns were noted during the week. Even though Keystone specifications allow arc burn evaluations, discussions with inspectors indicated that many arc burns could be eliminated by improved welder workmanship and increased

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **124953** Status: **Complete**

From Date: **04/23/2009** To Date: **11/06/2009**

AFO Total:	**96.0**
Non-AFO Total:	**.0**
ActivityTotal Days:	**96.0**

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
76523		**GULSTAD, RICK**	**09/14/2009**	**09/25/2009**	**INSPECTION**	**11.0**	**Y**	**3 - CENTRAL**

Comments: concentration to prevent the arc burns.

3) Coating evaluation on the mainline pipe has indicated that an excessive amount of holidays in the coating existed prior to receiving the pipe on site. Pre-jeeping of the coating was witnessed to identify many coating anomalies but due to the poor condition of the pipe many holidays appear to go undetected until a second jeeping by the lowering-in crew or a second pre-jeeping crew. Lowering-in was witnessed and had to be delayed anytime coating holidays had to be repaired. Concerns were expressed that the pipe may be lowered in the ditch without removal of many coating holidays.

4) OQ qualifications for contractor personnel were addressed with the contractor safety lead. Since there are other operating pipelines within the same ROW, the critical nature of proper pipeline locating was emphasized. Prior to departing the spread a list of contractor personnel who were qualified for specific covered tasks was reviewed.

Exit Observations: 9/24/2009
Keystone Crude Oil Pipeline
Spread 8B2 - Sheehan Contractor

Observations:

The following observations were noted on Spread 8B2 and were discussed during the week with spread inspectors:

5) It was noted that a welder on the pipe gang who was welding on the hot pass had amperage readings near or above the maximum amperage on the welding procedure of 205 amps especially from the 12-3 o¿clock position. This was discussed with the pipe gang welding inspector on two occasions. Subsequently it was learned that the welder was let go from the project for several reasons.

6) It was observed during lowering-in that jeeping of the coating was detecting several coating holidays which resulted in halting of the lowering-in operations to repair the coating anomalies. Pre-jeeping of the coating was witnessed and it was discussed with the pre-jeeping inspector that several indications were remaining after pre-jeeping.

71838		**HODILL, GABE**	**04/23/2009**	**04/23/2009**	**INSPECTION**	**1.0**	**Y**	**3 - CENTRAL**

Comments: G. Hodill conducted a construction inspection of the Fabrication Shop in Carrollton, MO with H. Shieh.

76679		**HODILL, GABE**	**08/25/2009**	**08/27/2009**	**INSPECTION**	**3.0**	**Y**	**3 - CENTRAL**

Comments: Spread 6B (St. Joseph) and Severance, KS pump station

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **124953** Status: **Complete**

From Date: **04/23/2009** To Date: **11/06/2009**

AFO Total:	**96.0**
Non-AFO Total:	**.0**
ActivityTotal Days:	**96.0**

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
76680		**HODILL, GABE**	**09/10/2009**	**09/10/2009**	**INSPECTION**	**1.0**	**Y**	**3 - CENTRAL**
	Comments: Severance, KS pump station							
76564		**OCHS, GREG A**	**09/14/2009**	**09/17/2009**	**INSPECTION**	**4.0**	**Y**	**3 - CENTRAL**
	Comments: Conduct a pipeline construction inspection of Spread 6B in NE Kansas and NW Missouri. During the inspection the pump stations at Severance and Seneca in Kansas were also visited. Daily construction reports have been placed in the files in drive P.							
77326		**OCHS, GREG A**	**10/28/2009**	**10/29/2009**	**INSPECTION**	**2.0**	**Y**	**3 - CENTRAL**
	Comments: Conduct a construction inspection of Keystone Pipeline Spread 7B.							
77343		**OCHS, GREG A**	**11/02/2009**	**11/02/2009**	**INSPECTION**	**1.0**	**Y**	**3 - CENTRAL**
	Comments: Conduct an inspection of the Keystone Pipeline Construction in Spread 7B at anomaly dig near Lathrop, MO.							
71837	**Y**	**SHIEH, HANS**	**04/23/2009**	**04/23/2009**	**INSPECTION**	**1.0**	**Y**	**3 - CENTRAL**
	Comments: Conducted a construction inspection of the Fabrication Shop in Carrollton, MO.							
72901	**Y**	**SHIEH, HANS**	**06/15/2009**	**06/19/2009**	**INSPECTION**	**5.0**	**Y**	**3 - CENTRAL**

Comments: H. Shieh conducted a construction inspection of Spread 7B out of Cameron, MO. Some items of concern were noted as follows:

1) On 6/16/2009, visited the mini-gang at Crowley Rd. Observed one welder on the hot pass welding at 200+ amps for a short time. Procedure calls for the maximum amperage to be 185 amps. Brought it to the attention of the inspector who immediately had the helper reduce the amperage to 180 amps. No other concerns noted.

2) On 6/17/2009, observed the kick-off of the coating crew at Hwy 33. Noted that the crews were utilizing an IR gun for determination of proper heat temperature of the heating ring. They were aiming the IR gun at the freshly blasted surface for the temperature. Indicated to the crews and the inspector that if they are using the IR gun, then it is to be shot at the adjacent coated surface. However, it turns out that the IR gun, and three temperature thermocouples were all reading incorrectly and partly led to the burning of one weld. This included the thermo-couple that the inspector had. That weld was cut out. The UEI coatings contractor arrived on the spread and assisted coating crew in sorting out the issues.

3) On 6/18/2009, observed some pre-jeeping of the mainline after the coating had been sorted out from the kick-off point at Hwy 33 going east. Noted some visual anomalies that were missed by the jeep. The UEI coatings contractor decided to stop the jeeping and check the jeep. It appears that this jeep, and another new jeep were both bad and were not reading anomalies. The next morning, a brand new jeep was brought on site and tested and worked fine. It was noted that no inspector was assigned to this crew. It may be beneficial to have one with this crew to ensure that the jeep is in good working order and catching all anomalies. As it stands, nobody knew that the jeep had gone bad. It was also noted that the coating contractor found a skid pad attached to the pipe after that section was jeeped. The pad was removed and the line was re-jeeped. The line must be clean of all foreign objects prior to jeeping.

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **124953** Status: **Complete**

From Date: **04/23/2009** To Date: **11/06/2009**

AFO Total:	**96.0**
Non-AFO Total:	**.0**
ActivityTotal Days:	**96.0**

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
72901	**Y**	**SHIEH, HANS**	**06/15/2009**	**06/19/2009**	**INSPECTION**	**5.0**	**Y**	**3 - CENTRAL**
73080	**Y**	**SHIEH, HANS**	**06/29/2009**	**07/03/2009**	**INSPECTION**	**5.0**	**Y**	**3 - CENTRAL**

Comments: H. Shieh conducted a construction inspection of Spread 7B. the following issues were noted and brought to the attention of Keystone.

1) On 6/29 and 6/30/2009, visited the Lower-in crew about 1 ½ mile east of I-35. Noted that the pipe still needed to be cleaned of debris and visuals needed to be addressed by the pre-jeeping. Visited the pre-jeepers on 7/1/2009 and was pleased to see that visuals and cleaning of the pipe was being addressed.

2) On 6/30/2009, observed the pipe gang just east of Houston Rd. Noted two minor concerns. Asked the inspector to check the pre-heat between the root and hot pass. The weld needed heat and the inspector had them pull out the propane tanks to re-heat the weld. Additionally, noticed one welder on the hot-pass welding above the maximum amperage allowed. Procedure calls for maximum amperage to be 205 amps. Welder was welding between 210 and 215. Inspector immediately had them lower it.

3) On 7/2/2009, a crack on weld 7B MS087 was found by the AUT and verified with MUT. X-ray before the AUT and after the AUT could not see the crack. Keystone personnel were still investigating the results of the AUT. Please keep me informed of the status of this situation.

73211	**Y**	**SHIEH, HANS**	**07/13/2009**	**07/16/2009**	**INSPECTION**	**4.0**	**Y**	**3 - CENTRAL**

Comments: H. Shieh conducted a construction insoection of Spread 6B in Hiawatha, KS. The observations noted are as follows:

1) On 7/13/2009, visited the Pipe Gang at around Horned Owl Road and 200th Street. Decided to check the travel speeds of one welder on the root bead and one on the hot pass. The welders were picked randomly. By my calculations, the travel speed found that the one welder on the root was around 18 in/min. The travel speed found on the one welder on the hot pass found it to be about 23 in/min. The 18 in/min is right at the maximum for the root. The 23 in/min exceeded the maximum for the hot pass. Note that my calculations are crude in that I had to estimate when they hit my start and stop marks, however, I do believe that the welders may be running a bit on the quick side.

2) Also, on 7/13/2009 at the same location, I talked with the repair welding inspector and the repair welder. During the course of the conversation, the storage hot box for the low hydrogen rods became a topic of discussion. It was noted that the welder was using the hot box, but the inspector indicated that it only got to 140º F. It appears that the box was defective, as they swapped it out for a new box, which now keeps the rods at or around the required 250º F. There are no concerns about the repair welds that were made prior to the swap, as the rods that are not used that day are thrown away each night.

3) On 7/15/2009, I visited the lowering in crew located between Highway 75 and Blackjack Rd. While walking up to the side booms, it was observed that the pipe in the ditch (after it was lowered in) still had mud and pieces of fiberboard still stuck on the pipe. There was also a plastic paper pouch holder still attached to the pipe that was in the ditch and apparently missed. Additionally, there was a circled anomaly that did not get repaired. As indicated before, all debris must be removed. The inspector indicated that he thought that maybe the reason why they missed the one anomaly was because it did not jeep. The inspection process before it is lowered into the ground includes remedial actions to visual anomalies as well as jeeps. If an

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **124953** Status: **Complete**

From Date: **04/23/2009** To Date: **11/06/2009**

AFO Total:	**96.0**
Non-AFO Total:	**.0**
ActivityTotal Days:	**96.0**

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
73211	**Y**	**SHIEH, HANS**	**07/13/2009**	**07/16/2009**	**INSPECTION**	**4.0**	**Y**	**3 - CENTRAL**

Comments: anomaly is called out by a visual inspection, it should still be addressed as if it were called out by a jeep.

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
76240	**Y**	**SHIEH, HANS**	**09/08/2009**	**09/12/2009**	**INSPECTION**	**5.0**	**Y**	**3 - CENTRAL**

Comments: Conducted a construction inspection of Spread 8B2. The following were items were noted:

1) On 9/9/2009, I went to the west side of the Mississippi River to observe the pull of the pipe under the river. Noted that the final jeeping was done at the last roller before the pipe goes through two cradles on side booms and then into the hole. Application of the two part was done by first sanding the jeep, then heating it up, and finally applying the two part epoxy. It appears that this is the opposite of what the procedure specifies for the application of the two part repair. The procedure is to heat the jeep first, and then sand the surface to get rid of any contaminants from the heating process.

Additionally, it was noted that the two repairs observed went through the cradles while the two part was still tacky. As a result, the two part repair was ruined. It takes almost an hour to get from the last roller (where the repairs are made) to the hole, and about 25 minutes to the first cradle. The jeeping crew thought that they did not heat the repair hot enough. In any case, they were going to increase the heat, as well as get a heat gun to help decrease the drying time. The 2nd picture with the arrow shows the tracks of the two part where both repairs went through the cradle wet. Photo was taken with a cell phone so the quality is not good.

2) We proceeded to the lowering in crew at Conn Drive and found two tie-in welders welding up a section. When I asked the inspector to take voltage and amperage readings, it was noted that he did not correctly take the amperage readings. He was putting the Fluke meter on the 600 amp setting, and then poking the positive and negative leads to try to get an amperage reading. He was not using the amp clamp. It did not appear that he was familiar with the Fluke meter.

3) On 9/10/2009, at Conn Rd, we observed some final jeeping and lowering in. It was noted that the laborers were not paying attention to the pads on the bottom of the pipe when they were cleaning the pipe of debris prior to jeeping. The inspector stopped everything and made sure the bottom of the pipe was addressed.

4) On 9/10/2009, I observed the repair welder making a repair near Baumann Rd. utilizing the low hydrogen repair procedure. After talking the amperage and voltage readings, I asked the inspector if he knew what the allowable ranges were for the pass the welder was on. He did not know, since he had just started the day before. When he went to get the procedures out of his truck, he found that he did not have them on him. He got the procedures the next day. The amps and voltages taken from the welder were within the allowable range.

5) On 9/11/2009, I observed a tie-in weld at Spring Creek on the going away side of Hwy 157. The weld and the inspection was very good and I did not have any concerns about that aspect. However, I did note that water was coming out of one of the ends which they dammed up with mud so they could weld. Please indicate the results of the NDT of that weld and if it was one to be UT¿d after 24 hours.

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
76399	**Y**	**SHIEH, HANS**	**09/15/2009**	**09/18/2009**	**INSPECTION**	**4.0**	**Y**	**3 - CENTRAL**

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **124953** Status: **Complete**

From Date: **04/23/2009** To Date: **11/06/2009**

AFO Total:	**96.0**
Non-AFO Total:	**.0**
ActivityTotal Days:	**96.0**

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
76399	**Y**	**SHIEH, HANS**	**09/15/2009**	**09/18/2009**	**INSPECTION**	**4.0**	**Y**	**3 - CENTRAL**

Comments: H. Shieh conducted a construction inspection of Spread 7B out of Carrollton, MO. The concerns were noted as follows:

1) On 9/15/2009, we drove down the ROW east of Kennedy Road where I saw that on the welds, the crews were noting the number of jeeps they had. I saw anywhere from 11 to 15 jeeps written on the weld. At a previous location, I asked one laborer what they meant by writing a number on the weld. He indicated to me that it was the number of jeeps they found on the coated welds.

However, at this location, when I looked at the coated welds for the repairs, there were none on the ones that were marked 11 to 15. UEI personnel indicated that they thought it was not the number of jeeps on the weld; but rather it was for the number of jeeps on the joint. However, a quick count of the jeep repairs on the joints did not match up to the numbers at all. It may have been that the welds were recoated. Please follow-up with me on what those numbers meant.

2) On 9/17/2009, we went to the tie-in crew located east of Hwy 139. Although the inspector was knowledgeable, he did not appear to understand what I was asking when I wanted to check for travel speeds. It may be that the inspector may need some more training on the calculation of travel speeds to ensure that the welding is within procedures.

3) After visiting the tie-in crew, we proceeded to the firing line where I observed quite a bit of weld splatter on the welds. Discussion with the firing line inspector and the welding foreman found that the contractor was leaving the splatter on the pipe adjacent to the weld as a result of previous issues, and was only cleaning the weld itself, per 1104. However, it was noted that on at least one weld, the splatter was not being cleaned off. This could interfere with the NDT interpretation of the weld. Per 1104, these welds must be cleaned of any foreign debris or attachments, otherwise the NDT film may be considered invalid.

4) On 9/18/2009, we visited the lowering in crew at Hwy 129. The only concern noted was that there was a build up of two part epoxy on the pipe where it appears that the laborers set the bucket down on the pipe when they were coating the welds. The build-up is quite high, which caused the jeep to lift off the surface of the pipe when jeeping. The coating crews should clean these drippings off, prior to leaving the weld. This issue should not be a problem in the future, since they are going to a spray-on coating now. However, as of now, the jeeping crews should knock these drippings off as they jeep.

76611	**Y**	**SHIEH, HANS**	**09/28/2009**	**10/01/2009**	**INSPECTION**	**4.0**	**Y**	**3 - CENTRAL**

Comments: Conducted a construction inspection of Spread 8B1 in Troy, MO. The spread rained out on Thursday, so I came home early. The only concern noted was the securing of the ground at one tie-in location. The inspector was unaware of the requirement.

76964	**Y**	**SHIEH, HANS**	**10/12/2009**	**10/16/2009**	**INSPECTION**	**5.0**	**Y**	**3 - CENTRAL**

Comments: Mark Spann conducted the construction inspection of Spread 8B1 in Troy, MO. No issues were found, except noting some unsecured grounds. This was addressed immediately with the Chief Welding Inspector.

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **124953** Status: **Complete**

From Date: **04/23/2009** To Date: **11/06/2009**

AFO Total: **96.0**
Non-AFO Total: **.0**
ActivityTotal Days: **96.0**

Compliance Registry	
CPF	Sent to CR

Letters Sent

Item #	CPF Number	Primary Reg	Secondary Reg	Result	Ls Date	Nature	Enforce ID	Case Status

Activity Comments

This activity was to document the construction time for this unit.

Portion Of Unit Inspected

the entire unit.

Inspection Result

N/A

Inspection Summary

N/A

Integrated Inspection

No Integrated Inspection

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **125517** Status: **Complete**

From Date: **06/15/2009** To Date: **10/16/2009**

AFO Total: **24.0**
Non-AFO Total: **.0**
ActivityTotal Days: **24.0**

Compliance Registry	
CPF	Sent to CR

Lead Person: **SHIEH, HANS**
Person Region: **3 - CENTRAL**

Added By: **RICK GULSTAD**
Date Added: **07/04/2009**

Changed By: **HANS SHIEH**
Date Changed: **04/03/2014**

Operator /Units

Operator: 32334 TC OIL PIPELINE OPERATIONS INC **Exec:** VERN MEIER VICE PRESIDENT, FIELD OPERATIONS

Activation Date: 05/13/2008 **Deactivation Date:** **Status:** Active **Region:** 4 - Southwest

1 Unit(s)

Unit ID	Name	Units Region	Status	Pipeline Type	Jurisdiction	Insp Plan
72677	**Keystone Mainline #2 (MP310.70 to MP639.50)**	**3 - Central**	**Active**	**INTERSTATE LIQUID**	**FEDERAL**	**Yes**

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
76942		**CONTRACTOR, CE**	**09/21/2009**	**09/25/2009**	**INSPECTION**	**5.0**	**Y**	**3 - CENTRAL**

Comments: Kent Calfee conducted the inspection of Spread 5B in Lincoln, NE. No concerns or issues were noted.

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
72997		**GULSTAD, RICK**	**06/15/2009**	**06/19/2009**	**INSPECTION**	**5.0**	**Y**	**3 - CENTRAL**

Comments: Exit Interview: 6/19/2009
Keystone Crude Oil Pipeline
Spread 4B Price-Gregory Contractor

Observations:

1) On 6/16/2009, reviewed welding procedures and welder qualifications with Glenn Harrell / welding inspector. Issues noted:

a: There was not a qualified procedure for a branch connection even though four welders were listed as having passed a branch connection qualification test. This issue was discussed with Gery Baumann and Hans Shieh and thought to be OK as long as welding is limited to pressure test headers only. Any branch connections welded on permanently installed pipe would require a branch welding procedure qualification.

b: Inquired about how disqualified welders are prevented from attempting to qualify on other Keystone construction spreads. Received response from Tom McMaster through Chuck Rapp that a list of disqualified welders would be distributed to other spreads.

2) On 6/16/2009, reviewed NDE procedures and NDE qualifications with Richard Hager ¿ Level II NDE reviewer. Issues noted:

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **125517** Status: **Complete**

From Date: **06/15/2009** To Date: **10/16/2009**

AFO Total:	24.0
Non-AFO Total:	.0
ActivityTotal Days:	24.0

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
72997		GULSTAD, RICK	06/15/2009	06/19/2009	INSPECTION	5.0	Y	3 - CENTRAL

Comments: * A current visual acuity check for a Level II NDE technician (Minyard) was not available in reviewed documentation. Mr. Hager was able to find a current visual examination for Mr. Minyard on 6/17/2009.

3) On 6/16/2009, inspected the coating of girth welds and jeeping crews. Issues noted:

* Noticed that the FBE coating ring was leaving gouges in the coating and were being undetected by the jeeping crew. Mike Herndon ¿ Foreman addressed the issue by having the coating ring adjusted. The jeep voltage setting was increased from 1750 volts to 2100 volts which then detected the coating flaws. Two-part epoxy was used to repair coating flaws and was being applied properly.

4) On 6/17/2009, inspected the pipe gang and firing line welding and checked volts and amps for the root bead, hot pass and filler passes. Noted that some amp readings were on the high side of amp ranges on the procedures but were still within the range. Issues noted:

* Spoke to Bill Clendening ¿ Price Gregory Welding Foreman about requiring splatter mats on the top side of the pipe during root bead, hot pass, and filler passes to prevent weld splatter on the coating.

5) On 6/18/2009, inspected backfilling operations without an inspector present and noted that there were some indications of rocks making there way into the backfill and landing on the pipe with an audible sound. Price Gregory laborers were present to remove as many rocks as could be located before the rocks made their way into the backfill.

6) On 6/18/2009, spoke with Richard Hager, Level II NDE and noted examples of film artifacts such as creasing of the developed film. Mr. Hager indicated that these locations would be "re-shot". Complemented Mr. Hager on his daily report which provides a snapshot of NDE activity for the previous day and for the project.

7) On 6/19/2009, spoke with Jim Brooking / Spread 4B RCS, Butch Stovall / Chief inspector, and Chuck Rapp about OQ requirements and asked for the actual covered tasks that are to be used on Spread 4B. Was presented with a list of potential covered task titles but not the actual covered tasks for the project. This remains a follow-up item.

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
72998		GULSTAD, RICK	06/22/2009	06/26/2009	INSPECTION	5.0	Y	3 - CENTRAL

Comments: Exit Interview: 6/25/2009
Keystone Crude Oil Pipeline
Spread 5B Price-Gregory Contractor

There appears to be good communication on Spread 5 between Bill Smock, RCS and Len Williamson, Chief Inspector to all other inspectors and the contractor.

1) Reviewed welding procedures, welder qualifications, and welding with Charles Castleman, Sr. Welding Inspector, Terry Putnam. Welding Inspector, and Tom Bell, Welding Inspector.

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **125517** Status: **Complete**

From Date: **06/15/2009** To Date: **10/16/2009**

AFO Total:	24.0
Non-AFO Total:	.0
ActivityTotal Days:	24.0

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
72998		GULSTAD, RICK	06/22/2009	06/26/2009	INSPECTION	5.0	Y	3 - CENTRAL

Comments:

* Noted that some welders are allowed to re-qualify after failing initial qualification test. It was recommended that documentation should note the justification for allowing a re-qualification.
* Received welding procedure MP 0077, Rev 5. Witnessed welding of pipe gang and firing line. Noted that amperages on hot pass, at times, are right at the upper limit of the new revision of 205 amps.
* Witnessed use of the bevel facing machine which appears to be doing a good job of preparing each bevel for welding.

2) Reviewed NDE qualifications and radiographic film with Marcus Overturff, Level II NDE technician.

* Gas pockets appear to be the main reason for repairs along with some instances of burn through, isolated slag inclusions, and porosity.

3) Inspected coating of mainline girth welds with Mike Saunders, Coating Inspector.

* Noted that handling of the fusion bonded epoxy coating ring occasionally left some gouge marks in the coating. This issue was quickly corrected by the coating crew.
* The jeep voltage setting had been adjusted to 2500 volts and appears to be detecting coating flaws effectively.

4) Reviewed OQ documentation with Brandon Brooks, Safety Coordinator. Received OQ covered tasks for the following:

* Backfill exposed pipe using heavy equipment
* Identify/locate/mark pipelines
* Excavate loaded pipelines
* Install/repair/maintain test leads and test stations

The above list of covered tasks is being adopted by TransCanada from the NCCER database which has been accepted by the pipeline industry. Mr. Brooks was asked whether TransCanada had reviewed/revised the above referenced covered tasks in accordance with TransCanada procedures as there was not documentation available to address this question.

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
72996	Y	SHIEH, HANS	07/27/2009	07/31/2009	INSPECTION	5.0	Y	3 - CENTRAL

Comments: H. Shieh conducted a construction insepction of Spread 4B in Yankton, SD. The issues noted were as follows:

1) Low- hydrogen rods were left unheated overnight. They were not thrown away or re-baked.

2) Noted a concern about Keystone's Seam to Seam policy. One finished weld looked like the offset was less than 2 inches.

3) Pads on the bending machine were worn down, causing damage to the caoting of the pipe.

4) On 7/30, I went to the tie-in crews at Antelope Creek and north of Road 883. After the tie in weld was made, it was noted that the long seam went right up to the weld. D. Lemmerman found this issue on Spread 3B last week and brought it to my attention.

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **125517** Status: **Complete**

From Date: **06/15/2009** To Date: **10/16/2009**

AFO Total:	**24.0**
Non-AFO Total:	**.0**
ActivityTotal Days:	**24.0**

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
72996	**Y**	**SHIEH, HANS**	**07/27/2009**	**07/31/2009**	**INSPECTION**	**5.0**	**Y**	**3 - CENTRAL**

Comments: It appears that there is a KPP 101 that specified that the long seam should be ground down flush with the surface of the pipe for two inches. As you can see, this is not being done (These are two different tie-in crews). Neither the welding inspectors nor the welders knew that the seam should be ground flush.

5) While at the Tie-In crew at Road 883, the welding inspector mentioned that the crew he was watching had only one repair the entire time that he had been watching them. When I asked where the welders were keeping the low-hydrogen rods, he indicated that they did not use low hydrogen rods on this repair. He apparently read in the KPP specifications that cellulose rods were ok to use on the root and hot pass. Because they could get to it from the inside (Burn through on the root), the welder just used a 6010 or 8010 rod on the repair. I believe that the only repair procedures Keystone has requires the use of low-hydrogen rods.

6) This tie in crew was also pre-jeeping a long section on the south side of Road 883. It was noted that the spring on the jeep was kinked pretty bad.

7) Additionally, the last weld on this section on the southern most end was coated with a two part epoxy. Unfortunately, it appears that during the drying process, the coating began to sag to the bottom. It looks as if the bottom of the weld would exceed Keystone¿s criteria for maximum mils. Additionally, on the top, there were a lot of pinholes and the weld was jeeping. The inspector should also be equipped with a dry mil gauge.

8) The jeeps on the spread should be calibrated twice a day, or every 4 hours per Keystone procedures.

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
76926	**Y**	**SHIEH, HANS**	**10/13/2009**	**10/16/2009**	**INSPECTION**	**4.0**	**Y**	**3 - CENTRAL**

Comments: H. Shieh conducted the construction inspection of Spread 4B in Norfolk, NE. The only issue noted was as follows:

1) While observing the lowering in of the 30 inch line south of County Road A1, it was noted that the jeeping crew before the lowering in booms were not checking the hardness of the repairs per KPP-01 and the referenced section 6.2.

Due to the cold, the repairs were not curing as quickly as they did in the summer. The crew lowering in the pipe was not the normal lowering in crew, but originally a tie-in crew. As a result, the coating repairs were not completely cured and could have been damaged by the lowering cradles.

It was also noted that the application of the two part was not being done in accordance to procedures. The jeep was filed down, then heated with a propane torch, and then the two part was applied. The filing or sanding of the anomaly should have been done after the heating with a propane torch.

The curing of the two part procedure should be reviewed with the crews now that the cold weather is starting to set in.

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2016-0093_000022

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **125517** Status: **Complete**

From Date: **06/15/2009** To Date: **10/16/2009**

AFO Total:	**24.0**
Non-AFO Total:	**.0**
ActivityTotal Days:	**24.0**

Compliance Registry	
CPF	Sent to CR

Letters Sent

Item #	CPF Number	Primary Reg	Secondary Reg	Result	Ls Date	Nature	Enforce ID	Case Status

Activity Comments

This activity was used to document the time spent on the construction inspection.

Portion Of Unit Inspected

The entire unit was inspected.

Inspection Result

N/A

Inspection Summary

N/A

Integrated Inspection

No Integrated Inspection

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2016-0093_000023

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **130429** Status: **Complete**

From Date: **06/21/2010** To Date: **11/22/2010**

AFO Total: **81.5**
Non-AFO Total: **.0**
ActivityTotal Days: **81.5**

Compliance Registry	
CPF	Sent to CR

Lead Person: **SHIEH, HANS**

Person Region: **3 - CENTRAL**

Added By: **HANS SHIEH**
Date Added: **06/29/2010**

Changed By: **HANS SHIEH**
Date Changed: **04/03/2014**

Operator /Units

Operator: 32334 TC OIL PIPELINE OPERATIONS INC **Exec:** VERN MEIER VICE PRESIDENT, FIELD OPERATIONS

Activation Date: 05/13/2008 **Deactivation Date:** **Status:** Active **Region:** 4 - Southwest

1 Unit(s)

Unit ID	Name	Units Region	Status	Pipeline Type	Jurisdiction	Insp Plan
72679	Kansas Cushing Extension	3 - Central	Active	INTERSTATE LIQUID	FEDERAL	Yes

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
83301		BAUMAN, GERY M	08/09/2010	08/13/2010	INSPECTION	5.0	Y	3 - CENTRAL
		Comments: Gery Bauman conducted a construction inspection of Spread 10C in Wichita this week.						
82414		CONTRACTOR, CE	06/21/2010	06/25/2010	INSPECTION	5.0	Y	3 - CENTRAL
		Comments: M. Spann conducted a construction inspection of Spread 10C.						
82660		CONTRACTOR, CE	06/28/2010	07/02/2010	INSPECTION	5.0	Y	3 - CENTRAL
		Comments: K. Calfee of ORNL conducted the inspection of Spread 9C.						
82914		CONTRACTOR, CE	07/12/2010	07/16/2010	INSPECTION	5.0	Y	3 - CENTRAL
		Comments: M. Spann of ORNL conducted the construction inspection of Spread 9C.						
83142		CONTRACTOR, CE	08/02/2010	08/06/2010	INSPECTION	5.0	Y	3 - CENTRAL
		Comments: M. Spann conducted the inspection of Spread 10C this week.						
83302		CONTRACTOR, CE	08/16/2010	08/20/2010	INSPECTION	5.0	Y	3 - CENTRAL
		Comments: K. Calfee conducted a construction inspection of Spread 9C in Junction City this week.						

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2016-0093_000024

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **130429** Status: **Complete**

From Date: **06/21/2010** To Date: **11/22/2010**

AFO Total:	81.5
Non-AFO Total:	.0
ActivityTotal Days:	81.5

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
84009		CONTRACTOR, CE	08/30/2010	09/03/2010	INSPECTION	5.0	Y	3 - CENTRAL
	Comments: K. Calfee of Oak Ridge conducted the inspection of Spread 9C for this week.							
84010		CONTRACTOR, CE	09/13/2010	09/17/2010	INSPECTION	5.0	Y	3 - CENTRAL
	Comments: M. Spann of Oak Ridge conducted the construction inspection of Spread 9C this week.							
84296		CONTRACTOR, CE	09/27/2010	10/01/2010	INSPECTION	5.0	Y	3 - CENTRAL
	Comments: D. Kyle conducted the construction inspection of Spread 10C. He also did an NDT review of the Spread and Rock Pump Station.							
84298		CONTRACTOR, CE	10/04/2010	10/08/2010	INSPECTION	5.0	Y	3 - CENTRAL
	Comments: D. Kyle conduced the construction inspection of Spread 9C. He also reviewed the NDT records for the spread and the NDT records for Hope Station.							
85171		HAMILTON, DARREN	11/22/2010	11/22/2010	INSPECTION	1.0	Y	3 - CENTRAL
	Comments: D. Hamilton assited H. Shieh in the review of hydrotest records for Spreads 9 and 10.							
82659		HODILL, GABE	06/28/2010	06/30/2010	INSPECTION	3.0	Y	3 - CENTRAL
	Comments: Conducted a constrcution inspection of Spread 10C.							
85170		HODILL, GABE	11/22/2010	11/22/2010	INSPECTION	1.0	Y	3 - CENTRAL
	Comments: G. Hodill assisted H. Shieh in the review of the hydrotest records for Spreads 9 and 10.							
82413	Y	SHIEH, HANS	06/21/2010	06/25/2010	INSPECTION	4.0	Y	3 - CENTRAL
	Comments: Conducted a construction inspection of Spread 9C.							
82661	Y	SHIEH, HANS	07/06/2010	07/09/2010	INSPECTION	4.0	Y	3 - CENTRAL
	Comments: H. Shieh conducted a construction inspection of Spread 10C.							
82915	Y	SHIEH, HANS	07/19/2010	07/23/2010	INSPECTION	4.0	Y	3 - CENTRAL
	Comments: H. Shieh conducted the construction inspection of Spread 10C.							
83143	Y	SHIEH, HANS	07/26/2010	07/30/2010	INSPECTION	4.0	Y	3 - CENTRAL
	Comments: H. Shieh conducted the construction inspection of Spread 9 this week.							

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **130429** Status: **Complete**

From Date: **06/21/2010** To Date: **11/22/2010**

AFO Total:	81.5
Non-AFO Total:	.0
ActivityTotal Days:	81.5

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
83349	Y	SHIEH, HANS	08/23/2010	08/27/2010	INSPECTION	4.0	Y	3 - CENTRAL
	Comments: H. Shieh conducted the construction visit of Spread 10C.							
84011	Y	SHIEH, HANS	09/20/2010	09/24/2010	INSPECTION	4.0	Y	3 - CENTRAL
	Comments: H. Shieh conducted the construction inspection of Spread 9C this week.							
84297	Y	SHIEH, HANS	09/28/2010	09/30/2010	INSPECTION	1.5	Y	3 - CENTRAL
	Comments: H. Shieh went to Spread 10C to accompany D. Kyle of ORNL when he did the NDT review of Rock Pump Station. That is when I noticed the expanded fitting on the valve cluster at the station.							
85169	Y	SHIEH, HANS	11/22/2010	11/22/2010	INSPECTION	1.0	Y	3 - CENTRAL
	Comments: H. Shieh conducted a review of the hydrotest records for Spreads 9 and 10. G. Hodill and D. Hamilton assisted in the review.							

Letters Sent

Item #	CPF Number	Primary Reg	Secondary Reg	Result	Ls Date	Nature	Enforce ID	Case Status

Activity Comments

This activity was created to document the construction time spent on this spread.

Portion Of Unit Inspected

The enitre unit was inspected.

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2016-0093_000026

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **130429** Status: **Complete**

From Date: **06/21/2010** To Date: **11/22/2010**

AFO Total:	**81.5**
Non-AFO Total:	**.0**
ActivityTotal Days:	**81.5**

Compliance Registry	
CPF	Sent to CR

Inspection Result

Issues were identified throughout the year. Keystone addressed most issues in a timely manner. See construction file for exit interviews and Keystone responses.

Inspection Summary

Conducted construction inspection of the Kansas Spread throughout the year.

Integrated Inspection

No Integrated Inspection

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2016-0093_000027

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **128392** Status: **Incomplete**

From Date: **01/05/2010** To Date: **12/23/2010**

AFO Total:	38.2
Non-AFO Total:	3.4
ActivityTotal Days:	41.6

Compliance Registry	
CPF	Sent to CR

Lead Person: **RALLIS, ANTHONY**

Person Region: **4 - SOUTHWEST**

Added By: **DAVID ENG**
Date Added: **01/12/2010**

Changed By: **VICTOR LOPEZ**
Date Changed: **08/30/2010**

Operator /Units

Operator: 32334 TC OIL PIPELINE OPERATIONS INC **Exec:** VERN MEIER VICE PRESIDENT, FIELD OPERATIONS

Activation Date: 05/13/2008 **Deactivation Date:** **Status:** Active **Region:** 4 - Southwest

1 Unit(s)

Unit ID	Name	Units Region	Status	Pipeline Type	Jurisdiction	Insp Plan
73558	**Keystone Cushing Extension**	**3 - Central**	**Active**	**INTERSTATE LIQUID**	**FEDERAL**	**Yes**

Assignments

Assign #	Lead Person	From Date	To Date	Task	Days	AFO	Region
78934	**ENG, DAVID**	**01/05/2010**	**01/12/2010**	**INSPECTION**	**1.5**		**4 - SOUTHWEST**
	Comments: Pre-inspection coordination with operator & contractor - welding procedures qualification						
78935	**ENG, DAVID**	**01/13/2010**	**01/15/2010**	**INSPECTION**	**2.5**	**Y**	**4 - SOUTHWEST**

Comments: Pre-construction inspection for Welding Procedures Qualifications at contractor's (Price Gregory - 850 Aldine Mail Route, Houston, TX)

Traveled to TransCanada Keystone Pipeline Contractor¿s (Price Gregory) temporary construction yard (850 Aldine Mail Route, Houston, TX) to observe Welding Procedures Qualifications using the RMS Welding Systems automated welding process. A mandatory safety orientation was conducted by the contractor¿s safety officer (Mike Ezzell) prior to being permitted into the work area.

Two sample welds were made and were NDE¿ed using radiographic examination. Production welds will ultimately be NDE¿ed in the field by AUT.

AUT was not used in examining the two welds as the NDE contractor (Shaw Pipeline Services) as the AUT calibration blocks had not arrived. Radiographic examination of the two weld indicated lack of fusion.

The lack of fusion issue was determined to be caused by voltage supply regulation problems on one leg of the shop¿s power system. This was determined after many attempted adjustments to the welding equipment leading without remedy leading to analysis/findings of voltage load irregularities within the shop area. This was corrected by having all welding equipment draw from a common leg within the shop.

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2016-0093_000028

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **128392** Status: **Incomplete**

From Date: **01/05/2010** To Date: **12/23/2010**

AFO Total:	**38.2**
Non-AFO Total:	**3.4**
ActivityTotal Days:	**41.6**

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
78935		**ENG, DAVID**	**01/13/2010**	**01/15/2010**	**INSPECTION**	**2.5**	**Y**	**4 - SOUTHWEST**

Comments: Welding was continued following this correction.

Subsequent sample welds were made and were NDE¿ed using radiographic examination, as the calibration blocks for AUT still had not arrived. 3 welds passed radiographic examination. 2 did not. Lack of fusion again an issue. TransCanada¿s procedures call for confirmation welds to be made for WPS. LOF to be determined.

MICROALLOYING Representative, Gary Keith stated that mechanical testing would be performed by BodyCote and CTOD value testing would be done by Exova, both located in Houston in the next few weeks.

Met with TransCanada personnel to obtain correct data for SMART, this will be inputted into the PHMSA database upon return to office

The pipe material utilized for the project is from one supplier (EVRAZ) and is drawn from a single plate material source (EVRAZ¿s Regina mill). The 36¿ line will be constructed from 4 wall thicknesses (0.465¿, 0.512¿, 0.572¿ & 0.615¿). All are spiral submerged arc welded manufactured pipe. Only the 0.465¿ WT pipe is 80% Special Permitted pipe. The 0.572¿ WT pipe is planned for use near pump stations and elevation changes occur, where required. MOPs in these areas are planned to be 1600 PSI vs. the remainder of the line¿s MOP (1440 PSI)

79325		**ENG, DAVID**	**01/25/2010**	**01/25/2010**	**INSPECTION**	**.8**	**Y**	**4 - SOUTHWEST**

Comments: Orientation at EXOVA¿s (fka Bodycote) lab concerning the mechanical and CTOD testing to be performed to qualify the Keystone project¿s welding procedure.

79734		**ENG, DAVID**	**02/01/2010**	**02/11/2010**	**INSPECTION**	**4.8**	**Y**	**4 - SOUTHWEST**

Comments: Inspection of Mechanical and CTOD testing activities of submitted weldments being qualified for Keystone Cushing extension.
An inspection was conducted to observe Mechanical and CTOD testing at EXOVA labs for weldment samples produced using the CRC mechanized welding method for the TransCanada Keystone Cushing Extension project. Keystone was conducting the tests to qualify the some of welding procedures to be used on the future construction project.
The following tasks were observed, but not limited to the following:
- Receipt and logging in of submitted welded pipe
- Cutting of test coupons from welded pipe submissions
- Machining and preparation of pipe for testing (mechanical and CTOD)
- Mechanical (Charpy) testing and recordation of results
- CTOD testing and recordation of results
- Digital microphotography of test samples

Keystone is qualifying its welding procedures via API 1104, 20th Ed. and will be utilizing the 20th Ed.¿s Appendix A CTOD methodology to determine the ECA criteria for AUT to be utilized in the field during mainline construction. CTOD values are being determined via BS 7448 pts. 1&2.
All testing was performed in accordance with procedures set forth in API 1104, 20th Ed, BS 7448 Pts. 1 & 2, as well as operator specific procedures and requirements.

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **128392** Status: **Incomplete**

From Date: **01/05/2010** To Date: **12/23/2010**

AFO Total:	38.2
Non-AFO Total:	3.4
ActivityTotal Days:	41.6

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
79734		ENG, DAVID	02/01/2010	02/11/2010	INSPECTION	4.8	Y	4 - SOUTHWEST
	Comments:	A final report of the test results will be prepared by EXOVA for submission to MicroAlloying/TransCanada. A copy of this report has been requested for PHMSA.						
80866		ENG, DAVID	03/19/2010	03/23/2010	INSPECTION	1.2	Y	4 - SOUTHWEST
	Comments:	Observed destructive (Charpy, tensile) Metalurgical Testing of weld samples supplied by Price Gregory for welding proceure and welder qualifications associated with Keystone project at EXOVA Labs in Houston, TX. Additionally, CTOD testing was performed on samples prepared by the lab. MicroAlloying is providing the third party representation for Keystone at the laboratory. Samples were a mix of automated welding for mainline construction and manual repair welds for .550" and .748" WT pipe. All pipe materials supplied for the project are from a sole source pipe mill and sole source plate mill. Results from the CTOD tests will be sent to Keifner & Associates to perform the stress analysis calculations. An ECA is expected to be drafted within two weeks. All the mechanical test results exceeded the minimum limits set for the pipe spec (API 5L X70).						
79462		LOPEZ, AGUSTIN	01/25/2010	01/25/2010	INSPECTION	.8	Y	4 - SOUTHWEST
	Comments:	Orientation at EXOVA¿s (fka Bodycote) lab concerning the mechanical and CTOD testing to be performed to qualify the Keystone project¿s welding procedure.						
79461		LOPEZ, VICTOR	01/25/2010	01/25/2010	INSPECTION	.8	Y	4 - SOUTHWEST
	Comments:	Orientation at EXOVA¿s (fka Bodycote) lab concerning the mechanical and CTOD testing to be performed to qualify the Keystone project's welding procedure. Met with Gary Keith of Microalloying International and Bradley Dial of EXOVA. A tour of the EXOVA labs was taken. The process and procedures of the testing of samples straps.						
80616		LOPEZ, VICTOR	03/02/2010	03/03/2010	INSPECTION	1.4	Y	4 - SOUTHWEST
	Comments:	I traveled to Price Gregory's temporary construction yard to observe Welding Procedures Qualifications using the RMS Welding Systems automated welding process. I met up with Gary Keith of Microallying International. Specs of the pipe used was 36" diamter, .785" w.t. X70. The filler material used is ER70S-G Microalloying is requiring Price Gregory to perform three consecutive welds that are consistent and have no defects. Three sample welds were made and were x-rayed by Shaw Pipeline. After the x-ray examination, the welds were AUT'd and detected lack of fusion in the root beed due to off set of the internal welding machine. Three more welds were started. On the initial rood beed of the first weld, porosity was found and Price Gregory had to re-start the weld. Upon leaving Price Gregory's shop, they had completed the root beed, and had completed four hot passes on the first girth weld.						

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **128392** Status: **Incomplete**

From Date: **01/05/2010** To Date: **12/23/2010**

AFO Total:	38.2
Non-AFO Total:	3.4
ActivityTotal Days:	41.6

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
80616		LOPEZ, VICTOR	03/02/2010	03/03/2010	INSPECTION	1.4	Y	4 - SOUTHWEST
		Comments: MICROALLOYING Representative, Gary Keith stated that mechanical testing would be performed and CTOD value testing would be done by Exova following the three welds pass.						
82286		LOPEZ, VICTOR	06/23/2010	06/23/2010		.2		4 - SOUTHWEST
		Comments: Prepare Govtrip for keystone construcion on July 21-15						
82417		LOPEZ, VICTOR	06/29/2010	06/29/2010		.2		4 - SOUTHWEST
		Comments: Govtrip authorization for keystone 7/26 site visit.						
82287		LOPEZ, VICTOR	07/12/2010	07/15/2010	INSPECTION	4.0	Y	4 - SOUTHWEST
		Comments: Keystone construction inspection on July 12-16. 1. MP 236.16, RD # 23,US Hwy 60 & N. Avenue: Boring under the highway was completed (First two pictures). There were no issues found and no problems with the boring. The trench was filled with water due to the rain. The third picture is boring at MP 235.11 RD #21, which had already taken place. 2. MP 235.11, RD #21: Met with Leeroy Phillips, foreman for Crew #1. Crew was excavating to prepare for boring under (4) Conoco Phillips (CP) lines. Three lines are perpendicular to the Keystone ROW, and one line intersects diagonally. The deepest CP line is 104-in. to the bottom of the 10-in. line. The bore is to be 14¿ 2¿ deep and approximately 80¿ long. The crossing is approximately 200¿ south of RD. 21 (W. South Ave), west of Ponca City. The bore pipe is spiral-36¿ x .512¿w.t. x70 manufactured by EVRAZ in Regina, Canada. The pipe segment had been tested at 1900 psi. The bore was completed on 7/14/2010 with no problems. The soil was soft and muddy due to rains. Soil seemed to be void of rocks and boulders. Lanney is the boring company for this crossing. 3. MP 249, RD 37: I met with Sam Johnson, welding inspector. Personnel were manual welding two sections of 36¿ x .615¿ w.t., X70M spiral pipe that will go under a road crossing. The two welders were Randall Stanley and Dean Doyle. Welding Inspector had welding procedures and welders had their welding qualification tests. 4. MP 223-224, south of RD 9A (Canteen Rd.): I witnessed automatic welding of the 36¿ line, .465¿ w.t. There are five automatic tents on the main line welding spread. There were two welding inspectors, Randy Hanks and George Slack at this spread. I witnessed Mr. Slack take readings of the welding machines. Welding inspectors are required to take two readings per day for every automatic welding machine. At this spread there were 14 welders working on this day. Welding inspectors did provide welding procedures and welder¿s qualifications. 5. I spoke with two NDT technicians of Shaw, Mike Medieros and Robert Blake. They both had their NDT Level II certifications. Mr. Blake stated the repair rate is approximately 2.5%.						
82753		LOPEZ, VICTOR	07/19/2010	07/19/2010		.2		4 - SOUTHWEST
		Comments: Govtrip voucher.						

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **128392** Status: **Incomplete**

From Date: **01/05/2010** To Date: **12/23/2010**

AFO Total: **38.2**
Non-AFO Total: **3.4**
ActivityTotal Days: **41.6**

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
83300		LOPEZ, VICTOR	08/16/2010	08/20/2010	INSPECTION	5.0	Y	4 - SOUTHWEST

Comments: 8/16-I met with Darrin Durda, the NDT Auditor on this spread. Mr. Durda went over the process of the NDT. I looked at calibration block certificates, the tech¿s certifications/documents. The mechanized welding is 100% AUT, and the stick welding is 100% x-rayed. Mr. Durda stated he reviews all AUT and x-ray scans himself after the field inspector brings them into the office. Mr. Durda also showed me the process of keeping track of all the weld repairs on the spread.

I met with Al Martin and Bill Laffoon for an update/status of the construction.
As of August 14, 2010, the segment from Oklahoma/Kansas border to Cushing, Ok (Spread 11C), is 51.6% completed. Spread 11C is approximately 84 miles long. The actual welding of the spread is 47.6% completed, according to Mr. Laffoon. There have been 2085 mechanized mainline welds
(GMAW) which all have been AUT¿ed, and 57 of them were rejected and repaired, with only 3 cut outs.
There are 1344 manual mainline welds (SMAW) which all have been RT¿ed, 59 were rejected and repaired and had no cut outs.
The total repair rate so far is 3.4%.
The main cause of repairs according to Mr. Laffoon, slagging.
There is HDD occurring during the week at the Salt Fork river by King Pipeline and will visit during the week.
The Ponca City Pump station at MP 243.92 is in progress and will visit during the week. Bechtel is the engineering company for the pump station.
Starting on August 17, Liquid epoxy coating will be applied by spraying.
Inquiry was made about possible pipe from India was being used on this spread, and according to Mr. Laffoon, all pipe utilized on Spread 11C is Canadian pipe by EVRAZ.
No major issues have been found during the auditing of the construction.
No field visit was made today.

8/17-Construction operations were shut down the entire day due to heavy rain storms and lightning.

I reviewed the specifications for coating (KPP-01), and the coating repair procedures. The coating is required to be between 20-50 mils. I also reviewed the Coating Inspection C11A and the Post Coating Inspection C11B reports. I also paid attention to the Jeeping voltage, the (5) DFT readings of the coating, and the Shore D Hardness reading of the coating which should be a minimum of 80.
In June 27, there were some DFT readings of 14, 13, 10, 42, 30, on weld 11DPS0215. I also noticed jeeping voltage at some segments were at 3800 volts, and 2700 volts.

I met with Charles Otwell, Neil Pittman, Thomas Joe Luce, and Roger Whiteley, to discuss the progress of the construction, particularly about the coating. We went over the liquid spray process, which will start on Wednesday, August 18. The spraying equipment was tested and qualified on Monday, August 16. There will be an 800 ft. exclusion zone from the coating equipment. There are several NACE certified inspectors on the spread. There will be personnel from the coating manufacturer and from CECO, the spraying equipment manufacturer to make sure it goes on smoothly.
I inquired about the DFT readings on weld 11DPS0215 and why it had passed. Mr. Otwell stated that workers had brushed on more coating. During Mr. Otwell¿s audit of the inspection process, he found the inspectors were not documenting the final DFT readings on form C11B. Mr. Otwell changed the procedure of filling out the C11A and C11A forms, which now document the correct DFT readings

I also inquired about the 3800 volts and 2700 volts used for jeeping and why they were higher. The voltage being used is 3750 v

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **128392** Status: **Incomplete**

From Date: **01/05/2010** To Date: **12/23/2010**

AFO Total:	38.2
Non-AFO Total:	3.4
ActivityTotal Days:	41.6

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
83300		LOPEZ, VICTOR	08/16/2010	08/20/2010	INSPECTION	5.0	Y	4 - SOUTHWEST
	Comments:	for abrasive resistant coating (ARO) and 2500 v for non-abrasive resistant coating. The jeeping voltage is allowed to go higher in some instances such as thick coating as in ARO pipe. There are three jeeping crews on this spread to make sure all holidays are detected.						
83443		LOPEZ, VICTOR	08/23/2010	08/26/2010		1.3		4 - SOUTHWEST
	Comments:	PIM, Daily reports and Govtrip voucher.						
85143		MENDOZA, JUAN	11/22/2010	11/22/2010	INSPECTION	.5	Y	4 - SOUTHWEST
	Comments:	Accompanied Tony Rallis on this meeting with Keystone personnel in the Gallaria area. Had discussion and reviewed hydrotest records for the Keystone Cushing Extension. Had discussions on the issue of expansion on their pipe construction fittings. Also discussions on how they had address girth weld coating on their pipeline.						
80488	Y	RALLIS, ANTHONY	03/01/2010	03/08/2010	INSPECTION	.5	Y	4 - SOUTHWEST
	Comments:	Met with Kieth at Microallying for tensile test results.						
85894	Y	RALLIS, ANTHONY	06/28/2010	07/01/2010	INSPECTION	4.0	Y	4 - SOUTHWEST
	Comments:	Inspection of Keystone construction project.						
82623	Y	RALLIS, ANTHONY	07/12/2010	07/15/2010	INSPECTION	4.0	Y	4 - SOUTHWEST

Comments: Operator Information
Name of Operator: Trans Canada Pipeline
Name of Unit(s): Keystone Expansion Pipeline
Unit Type & Commodity: Crude Oil Transmission
OP ID: Unit ID:
Inspection Information
PHMSA Representative(s): Tony Rallis Inspection Date: June 28- July1, 2010
Job Site Location: Construction Office ¿ Stillwater, Ok County/State: Stillwater, Ok
Activity #: 129400
Contacts Titles Phone No.
Trent Bertholet Quality Assurance Manager, KEP 316.315.4881
Bill Laffoon RCS Inspector, Universal Pegasus 405-564-0550
Steve Knopf Sr. Welding Inspector, UP 405-564-0546
Dean Farless Sr. Coating Inspector, UP 405-564-0547
Darrin Durda NDE Auditor, UP 405-564-0549
Chuck Rapp Escort, UP 785-643-9377

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **128392** Status: **Incomplete**

From Date: **01/05/2010** To Date: **12/23/2010**

AFO Total:	38.2
Non-AFO Total:	3.4
ActivityTotal Days:	41.6

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
82623	Y	RALLIS, ANTHONY	07/12/2010	07/15/2010	INSPECTION	4.0	Y	4 - SOUTHWEST

Comments: Description of Construction Status/Site Conditions/Summary Information:
The 2,148-mile Keystone Pipeline will transport crude oil from Hardisty, Alberta to U.S. Midwest markets at Wood River and Patoka, Illinois and then on to Cushing, Oklahoma now called the Keystone Expansion. The Canadian portion of the project involves the conversion of approximately 537 miles of existing Canadian Mainline pipeline facilities from natural gas to crude oil transmission service and construction of approximately 232 miles of pipeline, pump stations and terminal facilities at Hardisty, Alberta.
It will link up with a portion of the Keystone Pipeline that will be built through Kansas to Cushing, Oklahoma. The pipeline will then continue on through Oklahoma to a delivery point near existing terminals in Nederland, Texas to serve the Port Arthur, Tx. This portion of the pipeline will be called Keystone XL and will also be constructed to alternate MAOP criterion.
The Keystone Pipeline will have an initial nominal capacity of 435,000 barrels per day in late 2009 and will be expanded to a nominal capacity of 590,000 barrels per day in late 2010. Keystone Expansion pipeline will be 36 inches from the Nebraska/Kansas border to Cushing, Oklahoma and will add approximately 291 miles of new pipeline in Nebraska, Kansas and Oklahoma. Number of pump stations are 3 with one in OK. Pipe diameter 36 inches X70 high carbon steel pipe. Universal Ensco Inc. is the survey and design engineering contractor and the U.S. contractors are HC Price, Gregory & Cook, and Sheehan. The expansion portion of the pipeline is about 15% complete at this time.
Comments:
Arrived about 7 am KEP in Stillwater, Ok office and met with the inspectors listed above. Plans were made for the week and proceeded as follows:
Observations/Findings:
1. Accompanied Mr. Rapp to see the welding crew at the Salt Fork River crossing where they were manual welding the HDD pipe 36¿x0.748¿ X70 pipe for this crossing. I was surprised to see that this pipe was made by the Welspun pipe mill. The pipe was straight seam not the spiral pipe. However, the last time I witnessed mechanical tests of this type pipe for another operator, the yield strength result was 65,500psi, well below the 70ksi required. Photo 009
2. Checking the MTRs provided by Keystone verified the Welspun pipe as meeting all 5L strength requirements. KEP was advised, however, of Advisory Bulletin (PHMSA-2009-0148), and the experience we have had with low yield pipe.
3. Reviewed the pipe yard with Rapp and found that all line pipe, 36¿x0.465¿ X70, was made at the EVRAZ pipe mill in Regina, Canada and was assured the no substandard pipe has been found. Most line pipe in the field was double joined. At this time PHMSA has not detected any deficiencies with this pipe mill.
4. Reviewed was the four inch concrete coated pipe [photo] which was also made with Canadian 0.465¿ line pipe. No problems were identified.
5. Witnessed was the field bending process at road 20 at mile post 284 and road 5 mile post 219. Most bends were less than 2 degrees and did not present any problem except for a slight wrinkle [photo] in joint 37. All inspectors agreed it did not present.
6. Investigated the organizational structure of their radiographic and UT inspection processing and found it to be well configured with the level II inspectors being properly managed by the level III. I explain to KEP that we expect the inspection process to be very important and must be well managed and their inspector well trained and certified. KEP provided documentation of their NDE inspectors including their level III supervisors for both KEP and contractor Shaw.

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
84022	Y	RALLIS, ANTHONY	09/20/2010	09/23/2010	INSPECTION	4.0	Y	4 - SOUTHWEST

Comments: 9/19/2010
Arrived about 2 pm KEP in Stillwater, Ok office and met with the inspectors listed above. Plans were made for the week and

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **128392** Status: **Incomplete**

From Date: **01/05/2010** To Date: **12/23/2010**

AFO Total:	38.2
Non-AFO Total:	3.4
ActivityTotal Days:	41.6

Compliance Registry	
CPF	Sent to CR

Assignments

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
84022	Y	RALLIS, ANTHONY	09/20/2010	09/23/2010	INSPECTION	4.0	Y	4 - SOUTHWEST

Comments: proceeded as follows:
9/20/2010 No Issues were noted.
1. Accompanied Mr. Al Martin to see the bending crew at the Stillwater pipe yard where the 36¿x0.748¿ X70 pipe is being prepared for this project. No Issues were noted.

2. Other areas inspected were: welding MP 294 to MP 295.77, the X-Ray crew at between the road bore and stream crossing and the coating crew performing manual coating at MP 291 to MP 292.5. Received copies of most technicians certification.

9/21/2010 No Issues were noted.
3. A second trip to the pipe yard was made where pipe bending had been completed,

4. Visited the coating crew at the Salt Fork River HDD where manual coating procedure was being performed at road 29A.

5. The Hydro-test crew was conducting a test at Ponca City pump station to MP 236.2 to a pressure of 1860 psi for an eight hour cycle. Charts and records are to be provided after completion.

6. The HDD project at the Arkansas River was being set up with equipment.

7. The HDD crew at the Cimarron River had completed with the pilot drill for 2255 feet.

9/22/2010 A concern were noted.
8. A second visit was made to the coating crew at the Salt Fork River HDD where manual coating procedure was being performed at road 29A. At this location several 80 foot double joints of straight seam Welspun 36 inch x 0.748 inch wall, X70 pipe was noted. I raised a question about the integrity of this pipe with Keystone. I told them that the last time I witnessed tensile tests of straight seam X70, 888 wall Welspun [Rex E] pipe the yield strength was well below the SMYS. One was marked with HT # 832249. More information is expected after hydrostatic testing and the T. D. Williamson deformation tool run is completed. The type of tool will be checked for accuracy and Keystone¿s expansion calculations will be checked as soon as I receive this information.

9. Road bore crews 1 and 2 at MP 276 and #3 at MP 295.54 were visited.

10. The hydro-test crew at Ponca City Pump station to MP 267.19 was to complete testing this week. Records are to be provided next week.

Assign #	Lead	Person	From Date	To Date	Task	Days	AFO	Region
85895	Y	RALLIS, ANTHONY	09/20/2010	12/23/2010	INSPECTION	4.0	Y	4 - SOUTHWEST

Comments: Inspection of Keystone construction project.

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **128392** Status: **Incomplete**

From Date: **01/05/2010** To Date: **12/23/2010**

AFO Total:	38.2
Non-AFO Total:	3.4
ActivityTotal Days:	41.6

Compliance Registry	
CPF	Sent to CR

Letters Sent

Item #	CPF Number	Primary Reg	Secondary Reg	Result	Ls Date	Nature	Enforce ID	Case Status

Activity Comments

8/16-I met with Darrin Durda, the NDT Auditor on this spread. Mr. Durda went over the process of the NDT. I looked at calibration block certificates, the tech¿s certifications/documents. The mechanized welding is 100% AUT, and the stick welding is 100% x-rayed. Mr. Durda stated he reviews all AUT and x-ray scans himself after the field inspector brings them into the office. Mr. Durda also showed me the process of keeping track of all the weld repairs on the spread.
I met with Al Martin and Bill Laffoon for an update/status of the construction.
As of August 14, 2010, the segment from Oklahoma/Kansas border to Cushing, Ok (Spread 11C), is 51.6% completed. Spread 11C is approximately 84 miles long. The actual welding of the spread is 47.6% completed, according to Mr. Laffoon. There have been 2085 mechanized mainline welds
(GMAW) which all have been AUT¿ed, and 57 of them were rejected and repaired, with only 3 cut outs.
There are 1344 manual mainline welds (SMAW) which all have been RT¿ed, 59 were rejected and repaired and had no cut outs. The total repair rate so far is 3.4%.
The main cause of repairs according to Mr. Laffoon, slagging.
There is HDD occurring during the week at the Salt Fork river by King Pipeline and will visit during the week.
The Ponca City Pump station at MP 243.92 is in progress and will visit during the week. Bechtel is the engineering company for the pump station.
Starting on August 17, Liquid epoxy coating will be applied by spraying.
Inquiry was made about possible pipe from India was being used on this spread, and according to Mr. Laffoon, all pipe utilized on Spread 11C is Canadian pipe by EVRAZ.
No major issues have been found during the auditing of the construction.
No field visit was made today.
8/17-Construction operations were shut down the entire day due to heavy rain storms and lightning.
I reviewed the specifications for coating (KPP-01), and the coating repair procedures. The coating is required to be between 20-50 mils. I also reviewed the Coating Inspection C11A and the Post Coating Inspection C11B reports. I also paid attention to the Jeeping voltage, the (5) DFT readings of the coating, and the Shore D Hardness reading of the coating which should be a minimum of 80.
In June 27, there were some DFT readings of 14, 13, 10, 42, 30, on weld 11DPS0215. I also noticed jeeping voltage at some segments were at 3800 volts, and 2700 volts.
I met with Charles Otwell, Neil Pittman, Thomas Joe Luce, and Roger Whiteley, to discuss the progress of the construction, particularly about the coating. We went over the liquid spray process, which will start on Wednesday, August 18. The spraying equipment was tested and qualified on Monday, August 16. There will be an 800 ft. exclusion zone from the coating equipment. There are several NACE certified inspectors on the spread. There will be personnel from the coating manufacturer and from CECO, the spraying equipment manufacturer to make sure it goes on smoothly.

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Activity Detail Report

Activity Type: **CONSTRUCTION INSPECTION**

Activity ID: **128392** Status: **Incomplete**

From Date: **01/05/2010** To Date: **12/23/2010**

AFO Total:	38.2
Non-AFO Total:	3.4
ActivityTotal Days:	41.6

Compliance Registry	
CPF	Sent to CR

Activity Comments Continued

I inquired about the DFT readings on weld 11DPS0215 and why it had passed. Mr. Otwell stated that workers had brushed on more coating. During Mr. Otwell¿s audit of the inspection process, he found the inspectors were not documenting the final DFT readings on form C11B. Mr. Otwell changed the procedure of filling out the C11A and C11A forms, which now document the correct DFT readings
I also inquired about the 3800 volts and 2700 volts used for jeeping and why they were higher. The voltage being used is 3750 v for abrasive resistant coating (ARO) and 2500 v for non-abrasive resistant coating. The jeeping voltage is allowed to go higher in some instances such as thick coating as in ARO pipe. There are three jeeping crews on this spread to make sure all holidays are detected.

Portion Of Unit Inspected

8/18-I met with Darrin Durda, the NDT Auditor on this spread. Mr. Durda went over the process of the NDT. I looked at calibration block certificates, the tech¿s certifications/documents. The mechanized welding is 100% AUT, and the stick welding is 100% x-rayed. Mr. Durda stated he reviews all AUT and x-ray scans himself after the field inspector brings them into the office. Mr. Durda also showed me the process of keeping track of all the weld repairs on the spread.

I visited the Ponca City Pump Station at MP 244. TIC is the construction company of the pump and Bechtel is the engineering firm. I met Justin Harry, construction manager for TIC. There will be 3 pumps at the station with potential of adding two more in the future. Two of the pumps have already been placed on their platform and the third one was almost ready to be placed on its base. Welder qualifications were reviewed at the pump station. No issues were found.

I visited and met Jeremy King of King Pipeline, and Benny Graves, at the HDD site at the Salt Fork Arkansas River. King Pipeline is the HDD company. King was in the process of drilling with a 36¿ ream and were at 1200 ft. King plans to drill down to 60 ft. deep, 45 ft. below the bottom of the river. Mr. King showed me the controls and mapping of the drilling. No issues were found.
8/19-I met up with the first Jeeping crew at MP 247.5. I spoke with Lewis Tate, the Jeeping Lead and one of the coating inspectors. Coating inspector showed me her Post Coating Inspection Form C11B. She also demonstrated on how DFT and hardness readings were taken. Jeeping voltage was 2500 v and the crew was moving at approximately 1 mph.

I met Charles Otwell at MP 251 where the spray coating was in progress. The spray coating had started the day before and 70 girth welds were coated in less than 3 hours. There was an issue of an area of the upper to middle range of the girth weld that did not have enough coating. The issue was found to be that when one of the sprayers was getting off the later that is used to coat the top of the girth weld, he would stop spraying and restart. This was found to leave the upper to middle range lack of coating. This was resolved after the inspector relayed the information to Mr. Otwell.
Mr. Otwell seemed very knowledgeable and skilled in coating.

I met up with Coating inspector James Sweetney at MP 249. He did mentioned the issue of lack of coating due to the sprayer stopping the application of coating while he got off the latter, but the issue had been resolved.
An issue the inspector found was that when workers were sand blasting the girth weld for the coating, they were wrapping the pipe adjacent to the girth weld. Mr. Sweetney found the application of the coating was not being applied to the entire area that

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Activity Detail Report

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Activity ID: **128392** Status: **Incomplete**

From Date: **01/05/2010** To Date: **12/23/2010**

AFO Total:	**38.2**
Non-AFO Total:	**3.4**
ActivityTotal Days:	**41.6**

Compliance Registry	
CPF	Sent to CR

Portion Of Unit Inspected Continued

had been sand blasted. Mr. Sweetney had already relayed the information to Mr. Otwell. Coating was going to be applied by brush on the areas that lacked coating.

Inspection Result

No Inspection Result Comments

Inspection Summary

No Inspection Summary

Integrated Inspection

No Integrated Inspection

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