Form H: Direct Examination Data Sheet
Event 72298 on L-147 @97+70 M-147

PG&E *11/9/2013 5:34:58 AM* Status: 45-Cleared

Route Number/MP	L-147 @97+70 M-147	N-Segment	147	ILI Log Distance (ft.)	0.000 Feet
Examination Date	11/4/2013	IMA Number	N/A	RMP-11 Ref. Section	N/A
Exam Performed By	Redacted	Region Number	1	Reference Girth Weld	N
Project Manager		Sub # (ICDA)	N/A	Dist. From Girth Weld (ft.)	0.000 Feet
Order Number	41976828	Stationing	97+70		

Excavation Details

Excavation Priority	Other	Excavation Reason	Other
P/S or CIS reads before excavation (ON) mV	-1087	P/S or CIS (OFF) mV	--
PS/CIS Comments	Pipe-to-Soil was taken from a Coupon test station that was previously installed at this location.		
Planned Inspection Length (Feet)	12.00	Nominal Wall Thickness (Inches)	0.281
Actual Inspection Length (Feet)	12.00	Nominal Pipe Diameter (Inches)	20.000
		SMYS	--
Installation Year	--	MAOP	--
GPS File Name	M-147, L147	Design Factor	--

Planned Centerline GPS Coordinates (Based on GIS):	Northing (m)	Redacted
	Easting (m)	
Planned Centerline GPS Coordinates (Based on GIS):	Latitude	
	Longitude	
Centerline GPS Coordinates (Uncorrected Field Measurement):	Northing (m)	
	Easting (m)	
Centerline GPS Coordinates (Corrected Field Measurement):	Northing (m)	--
	Easting (m)	--

Prior To Coating Removal

Site Data

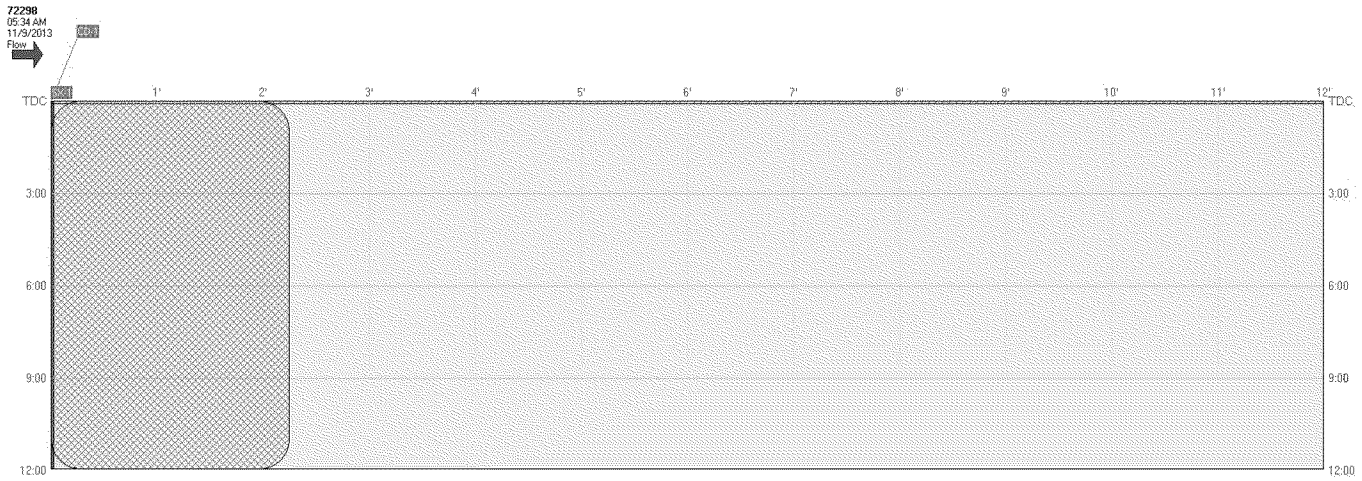
Evidence of Encroachment	N		
Encroachment Comments	No evidence of encroachment was found at the time of inspection.		
Primary Native Soil Type	Sand	Mixed Soil Types Explanation	Native soil consists of Sand and Base Rock
Backfill Material as found	Sand	Depth of Cover (Feet)	3.500
Backfill Comments	--		
Is Rock Shield present?	N		
Coating Type	Powercrete	Additional Coatings Found	Other
Coating Type Comments	There were 2 types of existing coating found at the time of inspection. The first type of coating is HAA that extended from 0" D/S to 27" D/S of reference. The 2nd type of coating is Powercrete J, which extended from 27" to 144" D/S of reference.		
Coating Thickness (Inches)	0.178	Number of Coating Layers	1
Holiday Testing Performed	N	Holiday Testing Voltage Used VOLTS	0
Holiday Testing Device Used	N/A		
Holiday Testing Comments	The existing coating was visually inspected for holidays, degradation and defects.		
Soil Sample Location	Upstream Edge		
Location notes	Soil Samples were taken at 3:00, U/S Edge of Coating Removal		
Ground Water Present	N	Sample Collected	N

Sample pH	0.000		
Coating Conditions	Fair - Coating Partially Disbonded or Degraded		
Coating Condition Comments	There were 2 types of existing coating found, HAA and Powercrete J. The HAA was in fair condition with one holiday noted in the report. The Powercrete J was in good condition with no holidays found.		
Coating Degradation Map Zero Reference Point	Upstream Edge of Coating Removal	Photos Taken	Y
Coating Sample Taken	Y	Location of Coating Sample	3:00, U/S edge of coating removal.
Liquid Underneath Coating	N	If Yes, pH of Liquid	0.000
Corrosion Product Present	N	If Yes, Corrosion Sample Taken	N
Comments	No corrosion product present at the time of inspection.		
Soil pH (Sb Electrode) U/S	5.500	Soil pH (Sb Electrode) D/S	5.500

Coating Damage

ID	Axial Location (Inches from Ref.)	Circ. Location (Inches from TDC)	Damage Type	Length (Inches)	Width (Inches)	Description/Notes	Image Link
CD-001	0.00	0 12:00	Rock Impression	27.00	63.50	The rock impression extended from 0" to 27" D/S of reference, full circumference.	

Map of Coating Degradation



P/S Potential Measurements

Pipe to Soil Potential in Ditch (mV)-Upstream	-1116
Pipe to Soil Potential in Ditch (mV)-Downstream	-1082
Pipe to Soil Potential in Ditch (mV) Comments	Pipe-to-Soil was taken in reference to a CSE.

Soil Resistivity

4-Pin Multiplier	--	Soil Box Multiplier	1000.000
4-Pin Ohms	--	Soil Box Ohms	4.300
4-Pin Spacing Distance in Feet	--		

4-Pin Resistivity	--	Soil Box Resistivity	4300.000
Soil Resistivity Comments	Unable to perform a 4pin test. The dig is located in a street.		

Data After Coating Removal

Pipe Temperature (F)	76.1	Measured Pipe Diameter (Inches)	20.212
Girth Weld Coordinates:		Measured Pipe Circumference (Inches)	63.5
Northing (m)	No Girth Weld present within excavation.	Easting (m)	No Girth Weld present within excavation.
Girth Weld Elevation (m)	0.000		
Corrosion Damage	Y	Mechanical Damage	N
Other Damage Notes	No other damage was found at the time of inspection.		
Wet Fluorescent Mag. Part. Test Performed?	Y	Were there any linear indications?	Y
WFMT Comments	WFMT was performed on 11/8/2013 on the 12' of exposed pipe, full circumference. 5 Linear Indications were found during the examination.		

Pipe Sections

ID	Weld Location (Inches from Ref.)	Long Seam (Inches from TDC)	Seam Type	Circumference (Inches)	Nominal Wall (Inches)	Description/Notes
SX-001	0.00	0 12:00	SMLS	63.50	0.281	Primary

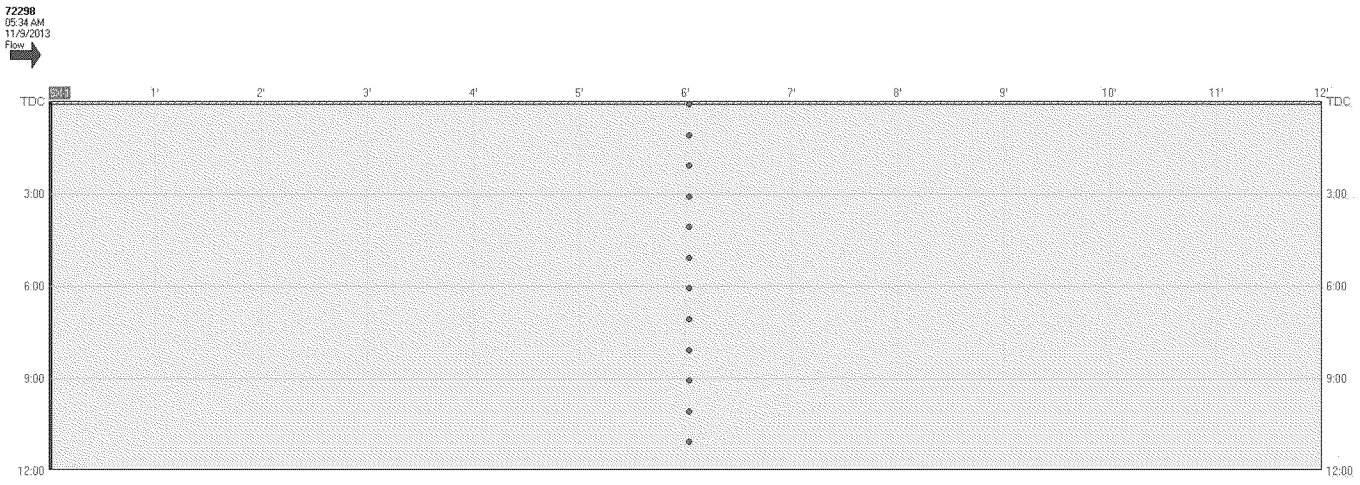
UT - Section O'Clocks (UTC)

ID	Axial Location (Inches from Ref.)	Circ. Location (Inches from TDC)	UT Thickness (Inches)	UT Section / O'Clock Position
SX-001	72.00	0.00	0.283	UT Wall Thickness-TDC
SX-001	72.00	5.29	0.281	UT Wall Thickness-1 O'clock
SX-001	72.00	10.58	0.279	UT Wall Thickness-2 O'clock
SX-001	72.00	15.88	0.281	UT Wall Thickness-3 O'clock
SX-001	72.00	21.17	0.277	UT Wall Thickness-4 O'clock
SX-001	72.00	26.46	0.268	UT Wall Thickness-5 O'clock
SX-001	72.00	31.75	0.264	UT Wall Thickness-6 O'clock
SX-001	72.00	37.04	0.254	UT Wall Thickness-7 O'clock
SX-001	72.00	42.33	0.257	UT Wall Thickness-8 O'clock
SX-001	72.00	47.63	0.260	UT Wall Thickness-9 O'clock
SX-001	72.00	52.92	0.270	UT Wall Thickness-10 O'clock
SX-001	72.00	58.21	0.279	UT Wall Thickness-11 O'clock

Mechanical Damage

ID	Axial Location (Inches from Ref.)	Circ. Location (Inches from TDC)	Damage Type	Length (Inches)	Width (Inches)	Max Depth (Inches)	Description/Notes	Image Link
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

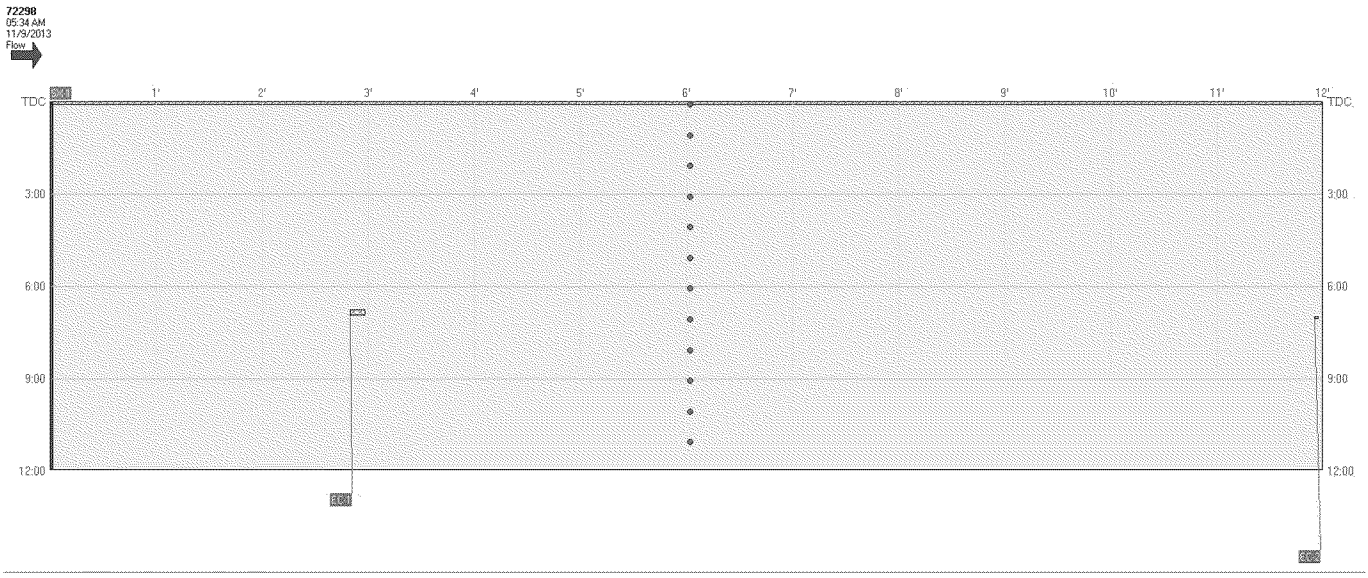
Map of Mechanical Damage



External Corrosion Mapping

ID	Axial Location (Inches from Ref.)	Circ. Location (Inches from TDC)	Type	Length (Inches)	Width (Inches)	Max Depth (Inches)	Description/Notes	Image Link
EC-001	34.00	35.78 6:45	Localized	1.75	1.00	0.062	Maximum wall loss is24.71%	
EC-002	143.00	37.04 7:00	Localized	0.50	0.50	0.036	Maximum wall loss is 13.432%	

Map of Corroded Area



External Pit Depth

EC-001	From TDC	1	2	3	4	5	6	7
A	35.78	.013		-	-	-	-	-

B	36.03	.011	.010	.038	.023	.002	-	-
C	36.28	-	.021	.062	.014	.012	.001	-
D	36.53	-	.004	.028	.007	.001	.002	.001

EC-002	Explanation
Details Not Provided - Max Depth: 0.036	Maximum wall loss is 13.432%

MP-001	Explanation
Details Not Provided - Max Depth: 0.263	indication extends into existing coating. indication was removed up to existing coating.

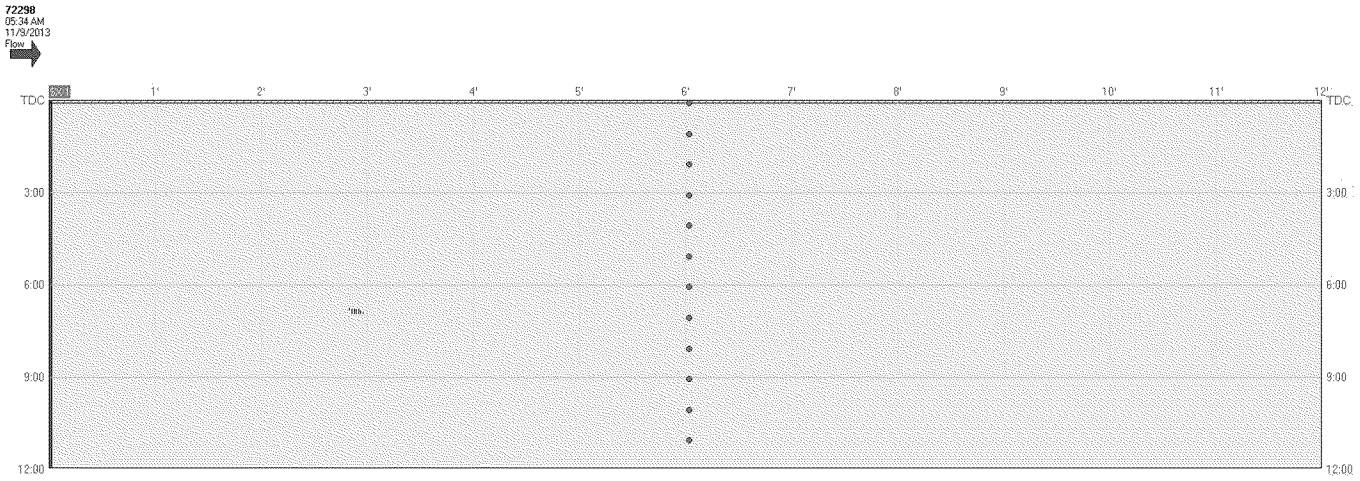
MP-002	Explanation
Details Not Provided - Max Depth: 0.26	indication was successfully removed

MP-003	Explanation
Details Not Provided - Max Depth: 0.265	indication was successfully removed

MP-004	Explanation
Details Not Provided - Max Depth: 0.251	indication was successfully removed

MP-005	Explanation
Details Not Provided - Max Depth: 0.254	indication was successfully removed

External Pit Depth Measurement Grids



UT - Internal Corrosion Grid (UTG)

Axial Location (Inches from Ref.)	Circ. Location (Inches/Clock from TDC)	UTT Column Minimum (Inches)	UTT Column Average (Inches)	UTT Column Maximum (Inches)

84.00	25.75 to 36.75	0.262	0.269	0.278
85.00	25.75 to 36.75	0.263	0.269	0.274
86.00	25.75 to 36.75	0.266	0.269	0.273
87.00	25.75 to 36.75	0.265	0.271	0.276
88.00	25.75 to 36.75	0.264	0.270	0.276
89.00	25.75 to 36.75	0.264	0.269	0.275
90.00	25.75 to 36.75	0.267	0.271	0.277
91.00	25.75 to 36.75	0.265	0.268	0.274
92.00	25.75 to 36.75	0.264	0.269	0.277
93.00	25.75 to 36.75	0.263	0.268	0.273
94.00	25.75 to 36.75	0.260	0.267	0.277
95.00	25.75 to 36.75	0.256	0.262	0.265

UTGrid	1	2	3	4	5	6	7	8	9	10	11	12
A	0.264	0.263	0.267	0.269	0.266	0.268	0.272	0.266	0.264	0.265	0.264	0.262
B	0.269	0.267	0.269	0.269	0.267	0.264	0.269	0.265	0.265	0.264	0.267	0.265
C	0.269	0.269	0.271	0.273	0.264	0.271	0.269	0.269	0.271	0.266	0.272	0.263
D	0.268	0.268	0.269	0.268	0.273	0.270	0.272	0.269	0.268	0.263	0.277	0.261
E	0.269	0.271	0.269	0.270	0.272	0.272	0.276	0.265	0.268	0.271	0.265	0.264
F	0.273	0.270	0.266	0.275	0.271	0.268	0.277	0.265	0.266	0.269	0.267	0.260
G	0.269	0.274	0.269	0.265	0.268	0.272	0.277	0.269	0.277	0.273	0.269	0.261
H	0.269	0.268	0.270	0.271	0.269	0.265	0.269	0.270	0.269	0.271	0.267	0.263
I	0.277	0.272	0.270	0.271	0.269	0.266	0.267	0.274	0.273	0.270	0.266	0.256
J	0.278	0.271	0.266	0.276	0.270	0.271	0.269	0.265	0.272	0.271	0.264	0.259
K	0.262	0.270	0.266	0.270	0.270	0.269	0.267	0.268	0.264	0.268	0.260	0.264
L	0.267	0.266	0.273	0.272	0.276	0.275	0.267	0.267	0.273	0.263	0.263	0.261

Recoat Data

CLIENT Rep. Approved to Proceed with Recoat: Redacted

MEARS Foreman Approved to Proceed with Recoat: Redacted

Sandblast Media	**Kleenblast**	Anchor Profile Measurement (mils)	--
Pipe Recoated With	**Protal 7200**		
Recoat Comments	--		
Air Temperature (°F)	--	Pipe Temperature (°F)	--
Time of Day	--	Dew Point (°F)	--
Relative Humidity (%)	--	Repair Coating Hardness (if ARC Coating)	--
Measured DFT - 3:00 (mils)	--	Measured DFT - 6:00 (mils)	--
Measured DFT - 9:00 (mils)	--	Measured DFT - 12:00 (mils)	--
Holiday Tested	--	Holiday Test Device Used	--
Voltage Used for Holiday Testing (Volts)	--		
Coupon Test Station Installed	--	ETS Installed	--
If Yes, Date Installed	--		
Surface Configuration	--		
Surface Configuration Comments	--		
Backfill Material	--		
Backfill Material Comments	--		
Coating Protection	--		
P/S Reading Over Bell Hole After Backfill (mV)	--		
Post Backfill P/S Reading Comments	--		

Repair Data

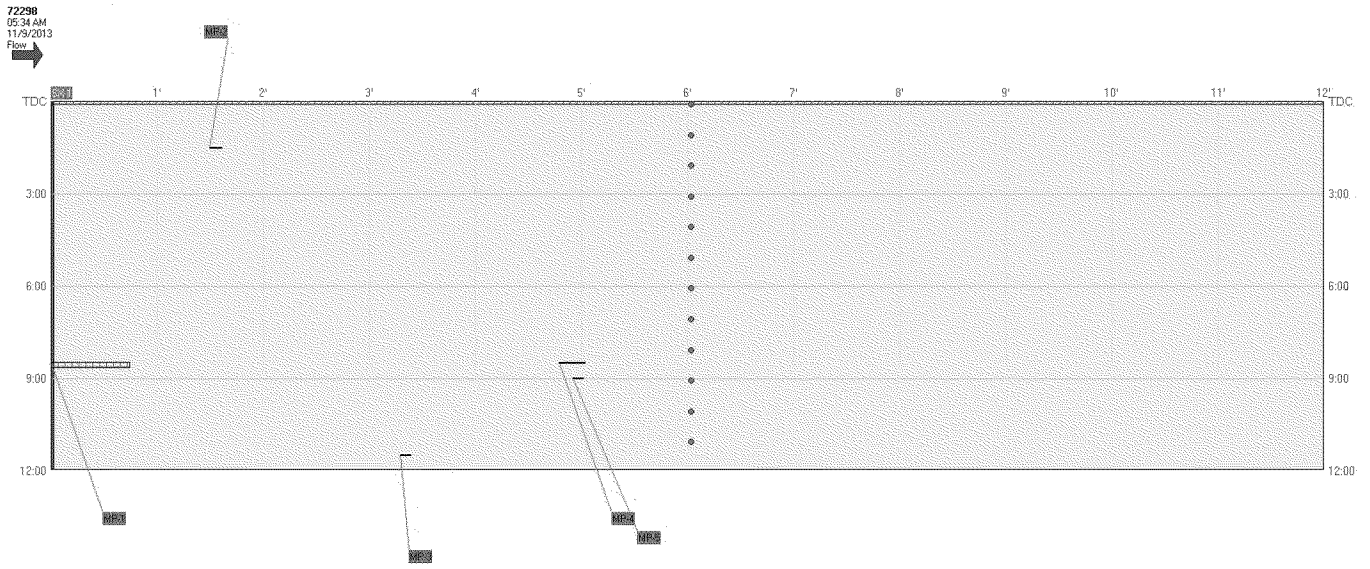
Repair Made	Y	Number of Repairs Made	5
Repair Type	Other	Damage Repaired	Other
Misc. Comments/Information	5 Linear Indications were removed via buffing.		

Magnetic Particle Examination

Magnetic Particle Data Available	Y	Examination Date	11/8/2013
Test Equipment	Yoke	Serial No.	43530
Technique	AC-Continuous	Test Medium	Wet-Fluorescent
Quality Control - Batch #	10M068		
Surface Condition	As Blasted NACE 2		
Reference GPS: Northing	4149795.081 m	Easting	565121.1792 m
Acceptance Criteria	No Linear Indications Allowed	Mag. Results Accepted	N

Magnetic Particle Anomaly Table

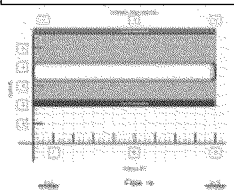
Ind. ID	Axial Location (Inches from Ref.)	Circ. Location (Inches from TDC)	Indication	Length (Inches)	Width (Inches)	Local Min. UTT (Inches)	Description/Notes	Image Link
MP-001	0.00	44.97 8:30	Singular	9.00	1.00	0.263	indication extends into existing coating. indication was removed up to existing coating.	
MP-002	18.00	7.93 1:30	Singular	1.50	0.25	0.260	indication was successfully removed	
MP-003	39.50	60.85 11:30	Singular	1.25	0.25	0.265	indication was successfully removed	
MP-004	57.50	44.97 8:30	Singular	3.00	0.25	0.251	indication was successfully removed	
MP-005	59.00	47.65 9:00	Singular	1.25	0.25	0.254	indication was successfully removed	



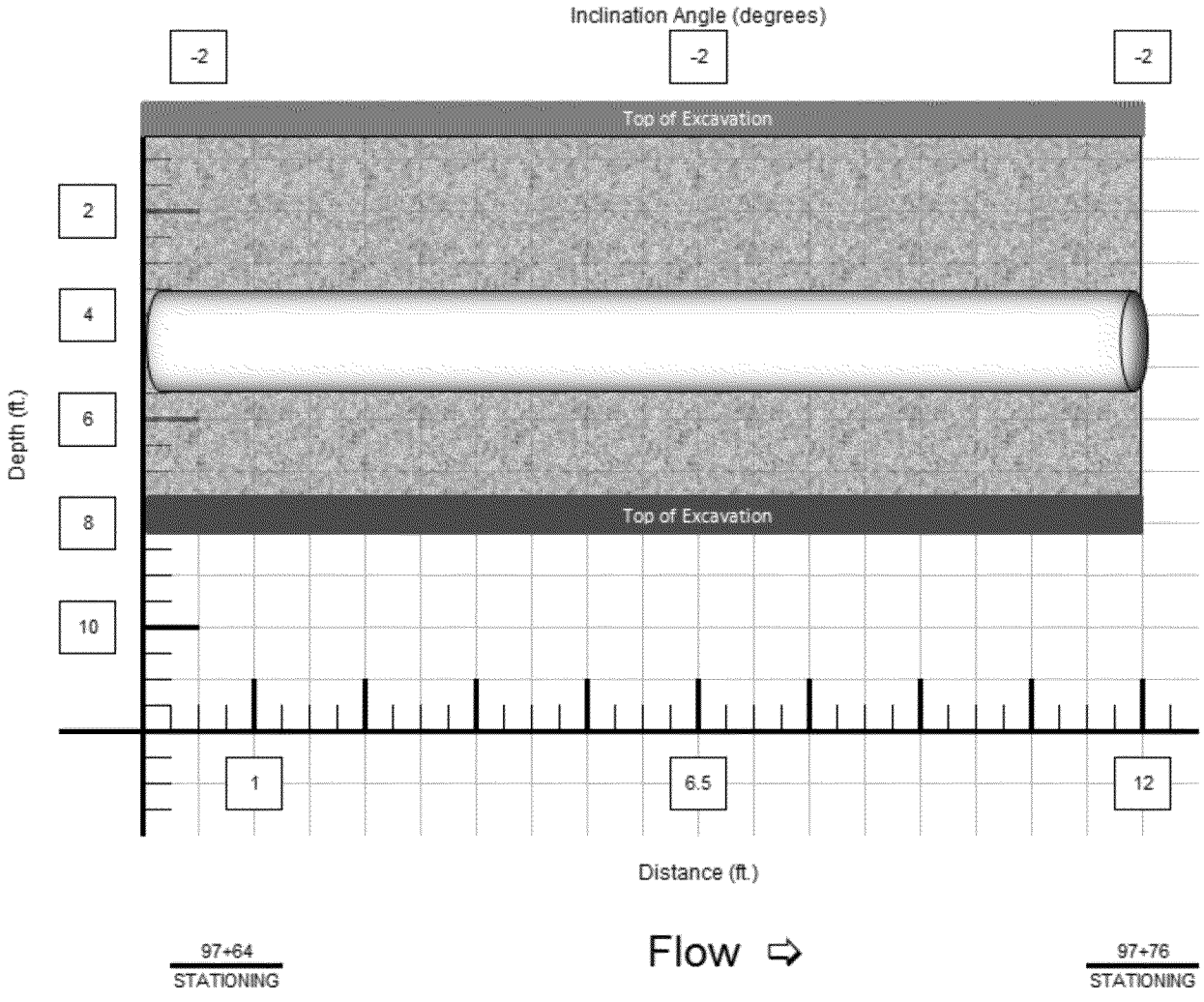
Comments **WFMT was performed on the 12' of exposed pipe, full circumference. 5 Linear Indications were found and noted in the report.**

Technician Name	Redacted	Mears Level	MT LEV II-Limited
Assistant	N/A	Mears Level	N/A

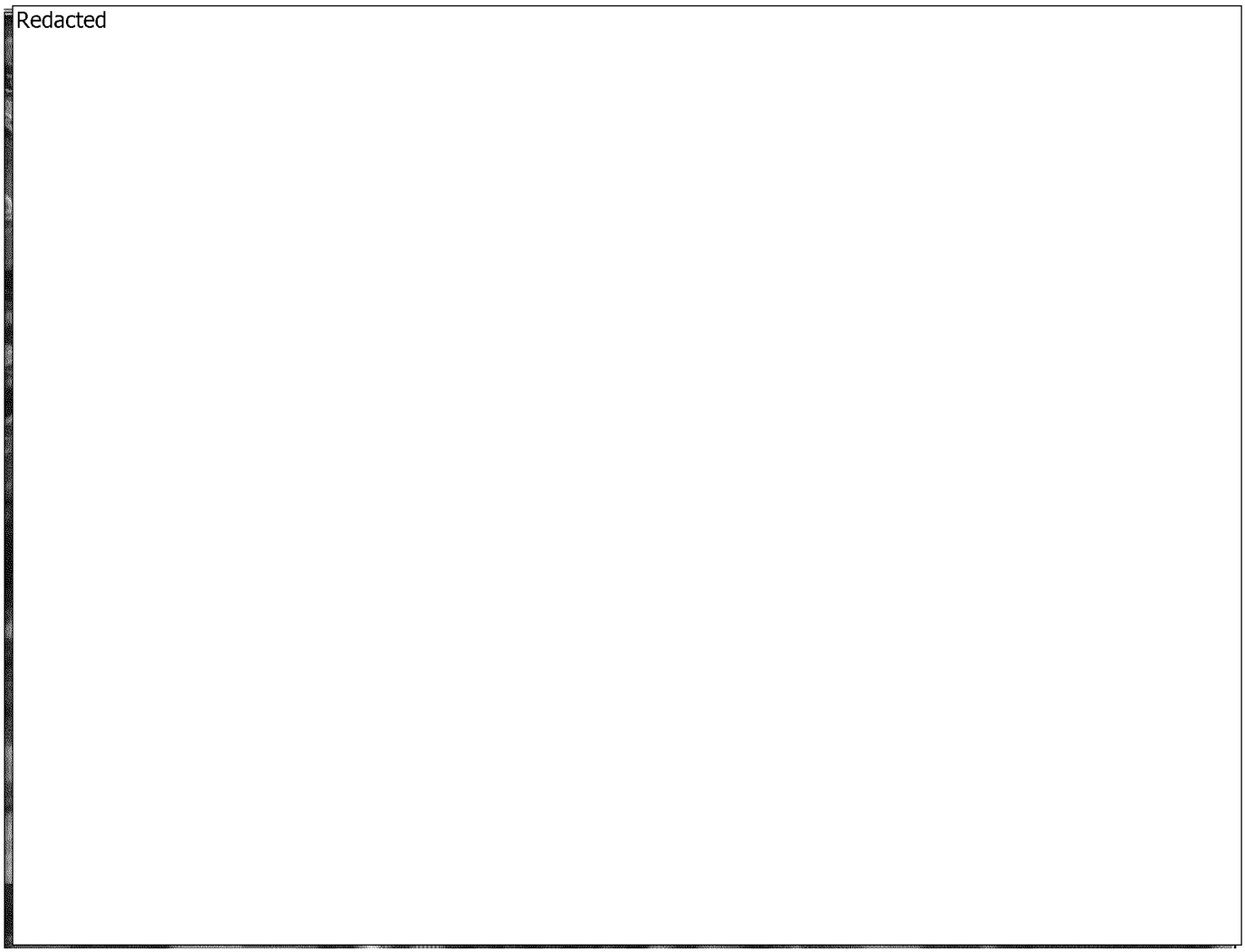
Photo Log

ID	Photo (CTRL-Click for Full Resolution)	Description
036	Redacted	Aerial_Diagram
037		Excavation_Diagram
UTG-001	C:\SQL\Images\Assigned\72298\ 72298_72298_M-147.CSV	C:\SQL\Images\Assigned\72298\72298_72298_M-147.CSV ' ; Grid Name: M-147; Note: ; Job Name: M-147; Date: NOVEMBER 7,; Operator: Redacted Comments:

Excavation Diagram



Site Map



Misc. Information/Comments

		Notes
[2013-11-03	Redacted]	MAOP Excavation. Inspection was performed at this location in 2004. This is a re-inspection with the primary purpose of confirming the LSW.
[2013-11-04		On 11/4/2013 The pipe was located, marked out and saw cut. Excavation was started.
[2013-11-05		The excavation was completed on 11/5/2013. A visual inspection of the existing coating was performed. There are two types of existing coating that were found. The first type of coating is HAA that extended from 0" D/S of reference to 27" D/S of reference. The second type of coating is Powercrete J, which was applied in 2004. The Powercrete J extended from 27" D/S of reference to 144" D/S of reference. There was one coating holiday found, which was a rock impression that extended from 0" to 27" D/S of reference, full circumference of the pipe. The Powercrete J coating was in good condition but there were "icicles" from 5:00 to 7:00 on the pipe. The HAA was removed. The Powercrete J will have to be removed by media blasting.
[2013-11-06		On 11/6/2013 A visual inspection was performed where the HAA type coating was removed. The Powercrete J coating was then removed using media blast. The entire 12' of exposed pipe was media blasted.
[2013-11-07		On 11/7/2013 The media blasted pipe inspection was started. Section 1 is 144" long and has a measured O.D. of 20.2". Redacted performed Acid Etching to determine if there is a LSW present. Prior to Acid Etching a UTT survey was performed at 72" D/S of reference, at each clock position. A circumferential band was polished with 60, 120 and 240 grit flapper wheel around the full circumference of the pipe. A 10% nital acid solution was then applied for 3-5 minutes. There was no LSW visible. It was determined that the pipe section is seamless. After completing the Acid Etch procedure a post buff UTT survey was performed. During the pipe inspection 2 Corrosion cells were found and noted in the report. EC-1 has a max depth of .062" resulting in 24.71% wall loss. EC-2 has a max depth of .036", resulting in 13.432% wall loss. There was no mechanical damage found at the time of inspection. Redacted was notified of the 2 External Corrosion cells.
[2013-11-08		On 11/8/2013 the media blasted pipe inspection was completed. WFMT was performed on the 12' of exposed pipe, full circumference. 5 Linear Indications were found and noted in the report. Redacted was onsite and he gave the okay to remove the 5 Linear Indications with up to 10% of material removed. Linear Indication 1 extends into the existing coating at the U/S edge of coating removal. Reda was made aware of this. Linear Indications 2,3,4 and 5 were completely removed with a maximum amount of material removed being 4.87%. Linear indication 1 was removed up to the existing coating Redact hen gave permission to proceed with recoat and backfill. Prior to media blast a UTT survey was taken at 12:00, D/S edge to ensure proper wall thickness prior to the Cad Welds with test leads being attached. The pipe was then media blasted. The Cad Welds with test leads were attached to the pipe at 12:00, D/S edge of coating removal.
[2013-11-08		The environmental and anchor profile were checked prior to recoat. The pipe was recoated with Protal 7200.