

เอกสารแนบที่ 8 แผนและบันทึกการบำรุงรักษาระบบท่อ  
ส่งก๊าซธรรมชาติ สถานีวัดและควบคุมแรงดันก๊าซ

Region 9 Pipeline Operation Division																																
Pipeline Preventive Maintenance Action Plan Year 2023					Prepared by					Reviewed by					Approved by					Rev.		1										
					(Mr.Patchara Watcharamai)					(Mr. Anupong Bangkiew)					(Mr.Chatchaval Limprasert)					Updated		1-Jan-23										
No.	Activities/Tasks					Month		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec		Responsibility
						Week		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
1	Patrolling																															
1.1 Ground Patrolling and Leakage Survey					I-วรด.-2042, F-รท.วรด.-0022															Planner : Engineering												
Main Pipeline (Class 3&4 : 1Y)																																

No.	Activities/Tasks	Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Responsibility												
		Week	1	2	3	4	1	2	3	4	1	2	3	4		1	2	3	4	1	2	3	4	1	2	3	4
15	RC 050504 SSUT1,2 และ BLOCK VALVE	Plan																									
		Actual																									
1.2 Crossing Patrolling		I-จรด.-2038, F-จรด.-0022													Planner :	Engineering											
Main Pipeline (Class 3&4 : 1Y)																											



No.	Activities/Tasks	Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Responsibility													
		Week	1	2	3	4	1	2	3	4	1	2	3	4		1	2	3	4	1	2	3	4	1	2	3	4	
3.2	Corrosion under pipe support Inspection/Corrosion under insulation	I-รตด.-2023, F-รท.รตด.-0033													Planner :	Engineering												
	Main Pipeline (1Y/5Y) Visual / Full Inspection Year 2025																											
13	RC 050504 SSUT1,2 และ BV 10.1	Plan																										g
		Actual																										
3.3	Wall Thickness Inspection	I-รท.รตด.-2047, F-รท.รตด.-0020													Planner :	Engineering												
	Main Pipeline (5Y) Y2023																											
13	RC 050504 SSUT1,2 และ BV 10.1	Plan																										Team A
		Actual																										
Remark :																												



สายงานระบบท่อส่งก๊าซธรรมชาติ บริษัท ปตท. จำกัด (มหาชน)

ส่วนปฏิบัติการระบบท่อเขต 9

แผนปฏิบัติการและบำรุงรักษาอุปกรณ์สถานีควบคุมและวัดปริมาตรก๊าซสำหรับลูกค้า ประจำปี 2566

หน่วย ปท.9-2

ชื่อลูกค้า: บริษัท เอสเอสยูที จำกัด (SSUT)

Plan Revision 0/2023

แผนกิจกรรม	ประเภทงาน / ระดับงาน CM หรือ PM (ML1, ML2, ML3)	Functional Location	Estimate Cost (Baht)	Year 2023												ผู้รับผิดชอบ
				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1.Safety Inspection/ Visual Check/ตัดยอดก๊าซฯ (วันที่ 1 & 16)	ML1	TSO-SSUT-Billing	N/A	M	M	M	M	M	M	M	M	M	M	M	M	
2.AirCon Cleaning, Station Cleaning, Test Fire Alarm / Battery Charger/ RTU Check	ML2	TSO-SSUT-Inspection	N/A					H,Y						H		1.คุณ สมชาย พรหมลาย
3.Grounding/ RTU ML2/ PT, TT Calibration	ML2	TSO-SSUT-Calibration	N/A					H,Y						H		โทร. 084-647-8720
4.Custody Type Transmitter Calibration (Transmitter-F/C)	ML2	TSO-SSUT-CustodyCal	N/A		Q			Q			Q			Q		2.คุณ คุณาวุฒิ ชินรัตน์ธง
5.Pressure Regulator Leak Test/ Set Point Test	ML2	TSO-SSUT-PCVML2	N/A					Y						H		โทร. 084-874-4207
6.Pressure Relief Valve Pop Test/ Set Point Test	ML2	TSO-SSUT-PSVML2	N/A					Y								เวลาทำการ 08.00 - 17.00 น.
7.Safety Shut-Off Valve Leak Test/ Set Point Test	ML2	TSO-SSUT-SSVML2	N/A					Y								นอกเวลาทำการ
8.ทำความสะอาดสถานี	ML2	TSO-SSUT-Clean	N/A					H						H		1540, 02-537-2000 Ext 35199
9.Ground Patrolling	ML2	TSO-SSUT-Patrolling	512,000			Q			Q			Q			Q	
10.Weeding	ML2	TSO-SSUT-Weeding	50,000			Q			Q			Q			Q	
11.Crane/ Chain hoist load test	ML2	TSO-SSUT-Crane	12,500					Y								
12. Unplanned/ Emergency CM	Unplanned CM	TSO-SSUT-CM	150,000													
13.จ้าง รปภ.	Others	P-SSUT-รปภ.	556,000	M	M	M	M	M	M	M	M	M	M	M	M	
<b>Remark</b>	<b>* &gt;&gt; ถ้าอนุมัติให้ทำปี 65 ไม่ต้องตั้งปี 66</b>	<b>รวมงบประมาณ</b>	<b>1,280,500</b>													

<b>Definition</b> M = Monthly Q = Quarterly H = Half of Year Y = Yearly 3Y = 3 Years 3Y(XX) = 3 Years (year to target) xY = x Years Preventive Maintenance Interval สำหรับ Gas Sale Equipment และอุปกรณ์ความปลอดภัย - Gas Turbine Meter & Flow computer calculation test ทุก 3 ปี - อุปกรณ์การวัดปริมาณก๊าซ Transmitter & Flow computer สอนเทียบทุก 3 เดือน - อุปกรณ์ PSV & SSV ทดสอบทุก 1 ปี		
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ผู้จัดทำ _____	ผู้ตรวจสอบ _____	ผู้อนุมัติ _____	วันที่อนุมัติ _____
วิศวกร	หน.ปท. 9-2	ผจ.ปท.9	...17.../...6.../...64..

## Patrolling Report

Inspection Type: ☒ Patrolling (Vehicle & Crossing) ☐ Ground Patrolling and Leakage Survey

Route Code: RC050504

Survey Route: RC050504

Region: Region9

Method: ☐ Without Gas detector ☐ With Gas detector (specify): \_\_\_\_\_Document Standard: ☐ ISO 9001 ☐ ISO 14001 ☐ มผช.18001 ☐ Other \_\_\_\_\_

Pipe Type:

License Number: กท2310098

Month: July 2023

No	Inspection Date	Survey Result	Inspection By	Check By	Approve By
1	03 Jul 2023	Anomaly	Digitally Signed JEERASAK THAVORN 03/07/2023	Digitally Signed PATCHARA WATCHARAMAI 06/07/2023	Digitally Signed ANUPONG BANGKIEW 10/07/2023
2	03 Jul 2023	Anomaly	Digitally Signed JAKKRIT HOMPA 03/07/2023	Digitally Signed PATCHARA WATCHARAMAI 06/07/2023	Digitally Signed ANUPONG BANGKIEW 10/07/2023
3	03 Jul 2023	Anomaly	Digitally Signed NAPHASIN RUANKAEW 03/07/2023	Digitally Signed PATCHARA WATCHARAMAI 06/07/2023	Digitally Signed ANUPONG BANGKIEW 10/07/2023
4	10 Jul 2023	Anomaly	Digitally Signed NAPHASIN RUANKAEW 10/07/2023	Digitally Signed PATCHARA WATCHARAMAI 15/07/2023	Digitally Signed ANUPONG BANGKIEW 20/07/2023
5	10 Jul 2023	Anomaly	Digitally Signed JEERASAK THAVORN 10/07/2023	Digitally Signed PATCHARA WATCHARAMAI 15/07/2023	Digitally Signed ANUPONG BANGKIEW 20/07/2023
6	10 Jul 2023	Anomaly	Digitally Signed NAPHASIN RUANKAEW 10/07/2023	Digitally Signed PATCHARA WATCHARAMAI 15/07/2023	Digitally Signed ANUPONG BANGKIEW 20/07/2023
7	10 Jul 2023	Anomaly	Digitally Signed JAKKRIT HOMPA 10/07/2023	Digitally Signed PATCHARA WATCHARAMAI 15/07/2023	Digitally Signed ANUPONG BANGKIEW 20/07/2023
8	10 Jul 2023	Anomaly	Digitally Signed PEERAPONG SRITHONG 10/07/2023	Digitally Signed PATCHARA WATCHARAMAI 15/07/2023	Digitally Signed ANUPONG BANGKIEW 20/07/2023
9	17 Jul 2023	Anomaly	Digitally Signed JEERASAK THAVORN 17/07/2023	Digitally Signed PATCHARA WATCHARAMAI 22/07/2023	Digitally Signed ANUPONG BANGKIEW 23/07/2023
10	17 Jul 2023	Anomaly	Digitally Signed JAKKRIT HOMPA 17/07/2023	Digitally Signed PATCHARA WATCHARAMAI 22/07/2023	Digitally Signed ANUPONG BANGKIEW 23/07/2023
11	17 Jul 2023	Anomaly	Digitally Signed PEERAPONG SRITHONG 17/07/2023	Digitally Signed PATCHARA WATCHARAMAI 22/07/2023	Digitally Signed ANUPONG BANGKIEW 23/07/2023
12	17 Jul 2023	Anomaly	Digitally Signed NAPHASIN RUANKAEW 17/07/2023	Digitally Signed PATCHARA WATCHARAMAI 22/07/2023	Digitally Signed ANUPONG BANGKIEW 23/07/2023
13	18 Jul 2023	Anomaly	Digitally Signed NAPHASIN RUANKAEW 18/07/2023	Digitally Signed PATCHARA WATCHARAMAI 22/07/2023	Digitally Signed ANUPONG BANGKIEW 23/07/2023
14	24 Jul 2023	Anomaly	Digitally Signed NAPHASIN RUANKAEW 24/07/2023	Waiting for approve PATCHARA WATCHARAMAI	Waiting for approve ANUPONG BANGKIEW

No	Inspection Date	Survey Result	Inspection By	Check By	Approve By
15	24 Jul 2023	Anomaly	<b>Digitally Signed</b> JEERASAK THAVORN 24/07/2023	<b>Waiting for approve</b> PATCHARA WATCHARAMAI	<b>Waiting for approve</b> ANUPONG BANGKIEW
16	24 Jul 2023	Anomaly	<b>Digitally Signed</b> PEERAPONG SRITHONG 24/07/2023	<b>Waiting for approve</b> PATCHARA WATCHARAMAI	<b>Waiting for approve</b> ANUPONG BANGKIEW
17	24 Jul 2023	Anomaly	<b>Digitally Signed</b> JAKKRIT HOMPA 24/07/2023	<b>Waiting for approve</b> PATCHARA WATCHARAMAI	<b>Waiting for approve</b> ANUPONG BANGKIEW
18	24 Jul 2023	Anomaly	<b>Digitally Signed</b> JEERASAK THAVORN 24/07/2023	<b>Waiting for approve</b> PATCHARA WATCHARAMAI	<b>Waiting for approve</b> ANUPONG BANGKIEW
19	31 Jul 2023	Anomaly	<b>Digitally Signed</b> JEERASAK THAVORN 31/07/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 01/08/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 01/08/2023
20	31 Jul 2023	Anomaly	<b>Digitally Signed</b> NAPHASIN RUANKAEW 31/07/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 01/08/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 01/08/2023
21	01 Aug 2023	Normal	<b>Digitally Signed</b> NAPHASIN RUANKAEW 01/08/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 01/08/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 01/08/2023
22	03 Aug 2023	Normal	<b>Digitally Signed</b> PEERAPONG SRITHONG 03/08/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 03/08/2023	<b>Waiting for approve</b> ANUPONG BANGKIEW



## Anomaly Report


Inspection Type: ☒ Patrolling (Vehicle & Crossing) ☐ Ground Patrolling and Leakage SurveyRegion: Region9 Method: ☒ Without Gas detector ☐ With Gas detector (specify): \_\_\_\_\_Document Standard: ☐ ISO 9001 ☐ ISO 14001 ☐ มอภ.18001

Pipe Type: \_\_\_\_\_

License Number: กท2310098Month: July 2023


Anomaly Data	Location	GPS			Anomaly Type	Anomaly Detail	Fix Plan	Status
		North	East	Zone				
18/10/2021	7	1,500,193.946	681,481.383	47P	Test post ถูกทำลาย	ฝาปิดบ่อ TP ขาด	18 Oct 2021	Finish
20/02/2023		1,500,139.78	681,502.436	47P	งานก่อสร้างในระยะ ROW	ขยายถนนและวางท่อระบายน้ำ	20 Feb 2023	Finish
17/04/2023		1,498,932.924	680,453.076	47P	งานลอกคูคลองระบายน้ำ	ก่อสร้างขยายทางระบายน้ำ	17 Apr 2023	Finish
13/06/2023	8-10	1,498,818.969	680,468.642	47P	งานก่อสร้างในระยะ ROW	กนอ. ปรับปรุงทางระบายน้ำ	13 Jun 2023	Issue

## Anomaly Detail Record


NO.	Anomaly Date	Location KP	Anomaly Detail	Fix Plan	Status
1	18/10/2021	7	ฝาปิดบ่อ TP ชำรุด	18 Oct 2021	Finish
Before Fix Problem					
					
After Fix Problem					
N/A					



## Anomaly Detail Record

NO.	Anomaly Date	Location KP	Anomaly Detail	Fix Plan	Status
3	17/04/2023		ก่อสร้างขยายทางระบายน้ำ	17 Apr 2023	Finish
Before Fix Problem					
					
After Fix Problem					
N/A					

## Anomaly Detail Record

NO.	Anomaly Date	Location KP	Anomaly Detail	Fix Plan	Status
4	13/06/2023	8-10	กนอ. ปรับปรุงทางระบายน้ำ	13 Jun 2023	Issue
Before Fix Problem					
					
After Fix Problem					
N/A					

## Patrolling Report

Inspection Type: ☒ Patrolling (Vehicle & Crossing) ☐ Ground Patrolling and Leakage Survey

Route Code: RC050504

Survey Route: RC050504

Region: Region9

Method: ☐ Without Gas detector ☐ With Gas detector (specify): \_\_\_\_\_Document Standard: ☐ ISO 9001 ☐ ISO 14001 ☐ มผศ.18001 ☐ Other \_\_\_\_\_

Pipe Type:

License Number: กน2310098

Month: August 2023

No	Inspection Date	Survey Result	Inspection By	Check By	Approve By
1	07 Aug 2023	Normal	Digitally Signed JEERASAK THAVORN 07/08/2023	Digitally Signed PATCHARA WATCHARAMAI 11/08/2023	Digitally Signed ANUPONG BANGKIEW 15/08/2023
2	07 Aug 2023	Normal	Digitally Signed JAKKRIT HOMPA 07/08/2023	Digitally Signed PATCHARA WATCHARAMAI 11/08/2023	Digitally Signed ANUPONG BANGKIEW 15/08/2023
3	08 Aug 2023	Normal	Digitally Signed NAPHASIN RUANKAEW 08/08/2023	Digitally Signed PATCHARA WATCHARAMAI 11/08/2023	Digitally Signed ANUPONG BANGKIEW 15/08/2023
4	14 Aug 2023	Normal	Digitally Signed JAKKRIT HOMPA 14/08/2023	Digitally Signed PATCHARA WATCHARAMAI 18/08/2023	Digitally Signed ANUPONG BANGKIEW 21/08/2023
5	14 Aug 2023	Normal	Digitally Signed NAPHASIN RUANKAEW 14/08/2023	Digitally Signed PATCHARA WATCHARAMAI 18/08/2023	Digitally Signed ANUPONG BANGKIEW 21/08/2023
6	14 Aug 2023	Normal	Digitally Signed NAPHASIN RUANKAEW 14/08/2023	Digitally Signed PATCHARA WATCHARAMAI 18/08/2023	Digitally Signed ANUPONG BANGKIEW 21/08/2023
7	21 Aug 2023	Normal	Digitally Signed CHAIYOTH PREABYODYING 21/08/2023	Digitally Signed PATCHARA WATCHARAMAI 28/08/2023	Digitally Signed ANUPONG BANGKIEW 31/08/2023
8	21 Aug 2023	Normal	Digitally Signed JAKKRIT HOMPA 21/08/2023	Digitally Signed PATCHARA WATCHARAMAI 28/08/2023	Digitally Signed ANUPONG BANGKIEW 31/08/2023
9	21 Aug 2023	Normal	Digitally Signed JEERASAK THAVORN 21/08/2023	Digitally Signed PATCHARA WATCHARAMAI 28/08/2023	Digitally Signed ANUPONG BANGKIEW 31/08/2023
10	21 Aug 2023	Normal	Digitally Signed PEERAPONG SRITHONG 21/08/2023	Digitally Signed PATCHARA WATCHARAMAI 28/08/2023	Digitally Signed ANUPONG BANGKIEW 31/08/2023
11	21 Aug 2023	Normal	Digitally Signed NAPHASIN RUANKAEW 21/08/2023	Digitally Signed PATCHARA WATCHARAMAI 28/08/2023	Digitally Signed ANUPONG BANGKIEW 31/08/2023
12	28 Aug 2023	Normal	Digitally Signed NAPHASIN RUANKAEW 28/08/2023	Digitally Signed PATCHARA WATCHARAMAI 31/08/2023	Digitally Signed ANUPONG BANGKIEW 31/08/2023
13	28 Aug 2023	Normal	Digitally Signed JEERASAK THAVORN 28/08/2023	Digitally Signed PATCHARA WATCHARAMAI 31/08/2023	Digitally Signed ANUPONG BANGKIEW 31/08/2023
14	28 Aug 2023	Normal	Digitally Signed CHAIYOTH PREABYODYING 28/08/2023	Digitally Signed PATCHARA WATCHARAMAI 31/08/2023	Digitally Signed ANUPONG BANGKIEW 31/08/2023

No	Inspection Date	Survey Result	Inspection By	Check By	Approve By
15	28 Aug 2023	Normal	<b>Digitally Signed</b> NAPHASIN RUANKAEW 28/08/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 31/08/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 31/08/2023
16	28 Aug 2023	Normal	<b>Digitally Signed</b> PEERAPONG SRITHONG 28/08/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 31/08/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 31/08/2023
17	28 Aug 2023	Normal	<b>Digitally Signed</b> JAKKRIT HOMPA 28/08/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 31/08/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 31/08/2023

## Anomaly Report

**Inspection Type:** ☒ Patrolling (Vehicle & Crossing) ☐ Ground Patrolling and Leakage Survey

**Region:** Region9 **Method:** ☒ Without Gas detector ☐ With Gas detector (specify): \_\_\_\_\_

**Document Standard:** ☐ ISO 9001 ☐ ISO 14001 ☐ มอก.18001

**Pipe Type:**


**License Number:** กท2310098

**Month:** August 2023


Anomaly Data	Location	GPS			Anomaly Type	Anomaly Detail	Fix Plan	Status
		North	East	Zone				
18/10/2021	7	1,500,193.946	681,481.383	47P	Test post ถูกทำลาย	ฝาปิดบ่อ TP ชำรุด	18 Oct 2021	Finish
17/04/2023		1,498,932.924	680,453.076	47P	งานลอกคูคลองระบายน้ำ	ก่อสร้างขยายทางระบายน้ำ	17 Apr 2023	Finish
13/06/2023	8-10	1,498,818.969	680,468.642	47P	งานก่อสร้างในระยะ ROW	กนอ. ปรับปรุงทางระบายน้ำ	13 Jun 2023	Issue




## Anomaly Detail Record

NO.	Anomaly Date	Location KP	Anomaly Detail	Fix Plan	Status
1	18/10/2021	7	ฝาปิดบ่อ TP ชำรุด	18 Oct 2021	Finish
Before Fix Problem					
					
After Fix Problem					
N/A					

## Anomaly Detail Record

NO.	Anomaly Date	Location KP	Anomaly Detail	Fix Plan	Status
2	17/04/2023		ก่อสร้างขยายทางระบายน้ำ	17 Apr 2023	Finish
Before Fix Problem					
					
After Fix Problem					
N/A					

## Anomaly Detail Record

NO.	Anomaly Date	Location KP	Anomaly Detail	Fix Plan	Status
3	13/06/2023	8-10	ถนน. ปรับปรุงทางระบายน้ำ	13 Jun 2023	Issue
Before Fix Problem					
					
After Fix Problem					
N/A					

## Patrolling Report

Inspection Type: ☒ Patrolling (Vehicle & Crossing) ☐ Ground Patrolling and Leakage Survey

Route Code: RC050504 Survey Route: RC050504 Region: Region9

Method: ☐ Without Gas detector ☐ With Gas detector (specify): \_\_\_\_\_Document Standard: ☐ ISO 9001 ☐ ISO 14001 ☐ มผศ.18001 ☐ Other \_\_\_\_\_

Pipe Type:

License Number: กน2310098

Month: September 2023

No	Inspection Date	Survey Result	Inspection By	Check By	Approve By
1	04 Sep 2023	Normal	Digitally Signed PEERAPONG SRITHONG 04/09/2023	Digitally Signed PATCHARA WATCHARAMAI 08/09/2023	Digitally Signed ANUPONG BANGKIEW 13/09/2023
2	04 Sep 2023	Normal	Digitally Signed NAPHASIN RUANKAEW 04/09/2023	Digitally Signed PATCHARA WATCHARAMAI 08/09/2023	Digitally Signed ANUPONG BANGKIEW 13/09/2023
3	04 Sep 2023	Normal	Digitally Signed NAPHASIN RUANKAEW 04/09/2023	Digitally Signed PATCHARA WATCHARAMAI 08/09/2023	Digitally Signed ANUPONG BANGKIEW 13/09/2023
4	04 Sep 2023	Normal	Digitally Signed CHAIYOTH PREABYODYING 04/09/2023	Digitally Signed PATCHARA WATCHARAMAI 08/09/2023	Digitally Signed ANUPONG BANGKIEW 13/09/2023
5	04 Sep 2023	Normal	Digitally Signed JAKKRIT HOMPA 04/09/2023	Digitally Signed PATCHARA WATCHARAMAI 08/09/2023	Digitally Signed ANUPONG BANGKIEW 13/09/2023
6	04 Sep 2023	Normal	Digitally Signed JEERASAK THAVORN 04/09/2023	Digitally Signed PATCHARA WATCHARAMAI 08/09/2023	Digitally Signed ANUPONG BANGKIEW 13/09/2023
7	11 Sep 2023	Normal	Digitally Signed PEERAPONG SRITHONG 11/09/2023	Digitally Signed PATCHARA WATCHARAMAI 18/09/2023	Digitally Signed ANUPONG BANGKIEW 30/09/2023
8	11 Sep 2023	Normal	Digitally Signed JEERASAK THAVORN 11/09/2023	Digitally Signed PATCHARA WATCHARAMAI 18/09/2023	Digitally Signed ANUPONG BANGKIEW 30/09/2023
9	11 Sep 2023	Normal	Digitally Signed CHAIYOTH PREABYODYING 11/09/2023	Digitally Signed PATCHARA WATCHARAMAI 18/09/2023	Digitally Signed ANUPONG BANGKIEW 30/09/2023
10	11 Sep 2023	Normal	Digitally Signed JAKKRIT HOMPA 11/09/2023	Digitally Signed PATCHARA WATCHARAMAI 18/09/2023	Digitally Signed ANUPONG BANGKIEW 30/09/2023
11	11 Sep 2023	Normal	Digitally Signed NAPHASIN RUANKAEW 11/09/2023	Digitally Signed PATCHARA WATCHARAMAI 18/09/2023	Digitally Signed ANUPONG BANGKIEW 30/09/2023
12	18 Sep 2023	Normal	Digitally Signed JEERASAK THAVORN 18/09/2023	Digitally Signed PATCHARA WATCHARAMAI 29/09/2023	Digitally Signed ANUPONG BANGKIEW 30/09/2023
13	18 Sep 2023	Normal	Digitally Signed CHAIYOTH PREABYODYING 18/09/2023	Digitally Signed PATCHARA WATCHARAMAI 29/09/2023	Digitally Signed ANUPONG BANGKIEW 30/09/2023
14	18 Sep 2023	Normal	Digitally Signed PEERAPONG SRITHONG 18/09/2023	Digitally Signed PATCHARA WATCHARAMAI 29/09/2023	Digitally Signed ANUPONG BANGKIEW 30/09/2023

No	Inspection Date	Survey Result	Inspection By	Check By	Approve By
15	18 Sep 2023	Normal	<b>Digitally Signed</b> NAPHASIN RUANKAEW 18/09/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 29/09/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 30/09/2023
16	18 Sep 2023	Normal	<b>Digitally Signed</b> NAPHASIN RUANKAEW 18/09/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 29/09/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 30/09/2023
17	18 Sep 2023	Normal	<b>Digitally Signed</b> JAKKRIT HOMPA 18/09/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 29/09/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 30/09/2023
18	25 Sep 2023	Normal	<b>Digitally Signed</b> JAKKRIT HOMPA 25/09/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 29/09/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 02/10/2023
19	25 Sep 2023	Normal	<b>Digitally Signed</b> CHAIYOTH PREABYODYING 25/09/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 29/09/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 02/10/2023
20	25 Sep 2023	Normal	<b>Digitally Signed</b> JEERASAK THAVORN 25/09/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 29/09/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 02/10/2023
21	25 Sep 2023	Normal	<b>Digitally Signed</b> NAPHASIN RUANKAEW 25/09/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 29/09/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 02/10/2023
22	25 Sep 2023	Normal	<b>Digitally Signed</b> PEERAPONG SRITHONG 25/09/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 29/09/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 02/10/2023

Anomaly Report

Inspection Type: ☒ Patrolling (Vehicle & Crossing) ☐ Ground Patrolling and Leakage Survey

Region: Region9 Method: ☒ Without Gas detector ☐ With Gas detector (specify): \_\_\_\_\_

Document Standard: ☐ ISO 9001 ☐ ISO 14001 ☐ มอก.18001


Pipe Type: \_\_\_\_\_

License Number: กท2310098

Month: September 2023

Anomaly Data	Location	GPS			Anomaly Type	Anomaly Detail	Fix Plan	Status
		North	East	Zone				
13/06/2023	8-10	1,498,818.969	680,468.642	47P	งานก่อสร้างในระยะ ROW	กนอ. ปรับปรุงทางระบายน้ำ	13 Jun 2023	Issue

## Anomaly Detail Record

NO.	Anomaly Date	Location KP	Anomaly Detail	Fix Plan	Status
1	13/06/2023	8-10	ถนน. ปรับปรุงทางระบายน้ำ	13 Jun 2023	Issue
Before Fix Problem					
					
After Fix Problem					
N/A					

## Patrolling Report

Inspection Type: ☒ Patrolling (Vehicle & Crossing) ☐ Ground Patrolling and Leakage Survey

Route Code: RC050504 Survey Route: RC050504 Region: Region9

Method: ☐ Without Gas detector ☐ With Gas detector (specify): \_\_\_\_\_Document Standard: ☐ ISO 9001 ☐ ISO 14001 ☐ มผช.18001 ☐ Other \_\_\_\_\_

Pipe Type:

License Number: กท2310098

Month: October 2023

No	Inspection Date	Survey Result	Inspection By	Check By	Approve By
1	02 Oct 2023	Normal	Digitally Signed PEERAPONG SRITHONG 02/10/2023	Digitally Signed PATCHARA WATCHARAMAI 07/10/2023	Digitally Signed ANUPONG BANGKIEW 09/10/2023
2	02 Oct 2023	Normal	Digitally Signed JEERASAK THAVORN 02/10/2023	Digitally Signed PATCHARA WATCHARAMAI 07/10/2023	Digitally Signed ANUPONG BANGKIEW 09/10/2023
3	02 Oct 2023	Normal	Digitally Signed JAKKRIT HOMPA 02/10/2023	Digitally Signed PATCHARA WATCHARAMAI 07/10/2023	Digitally Signed ANUPONG BANGKIEW 09/10/2023
4	02 Oct 2023	Normal	Digitally Signed NAPHASIN RUANKAEW 02/10/2023	Digitally Signed PATCHARA WATCHARAMAI 07/10/2023	Digitally Signed ANUPONG BANGKIEW 09/10/2023
5	02 Oct 2023	Normal	Digitally Signed CHAIYOTH PREABYODYING 02/10/2023	Digitally Signed PATCHARA WATCHARAMAI 07/10/2023	Digitally Signed ANUPONG BANGKIEW 09/10/2023
6	09 Oct 2023	Normal	Digitally Signed JAKKRIT HOMPA 09/10/2023	Digitally Signed PATCHARA WATCHARAMAI 14/10/2023	Digitally Signed ANUPONG BANGKIEW 15/10/2023
7	09 Oct 2023	Normal	Digitally Signed NAPHASIN RUANKAEW 09/10/2023	Digitally Signed PATCHARA WATCHARAMAI 14/10/2023	Digitally Signed ANUPONG BANGKIEW 15/10/2023
8	09 Oct 2023	Normal	Digitally Signed NAPHASIN RUANKAEW 09/10/2023	Digitally Signed PATCHARA WATCHARAMAI 14/10/2023	Digitally Signed ANUPONG BANGKIEW 15/10/2023
9	09 Oct 2023	Normal	Digitally Signed CHAIYOTH PREABYODYING 09/10/2023	Digitally Signed PATCHARA WATCHARAMAI 14/10/2023	Digitally Signed ANUPONG BANGKIEW 15/10/2023
10	09 Oct 2023	Normal	Digitally Signed PEERAPONG SRITHONG 09/10/2023	Digitally Signed PATCHARA WATCHARAMAI 14/10/2023	Digitally Signed ANUPONG BANGKIEW 15/10/2023
11	09 Oct 2023	Normal	Digitally Signed JEERASAK THAVORN 09/10/2023	Digitally Signed PATCHARA WATCHARAMAI 14/10/2023	Digitally Signed ANUPONG BANGKIEW 15/10/2023
12	16 Oct 2023	Normal	Digitally Signed JEERASAK THAVORN 16/10/2023	Digitally Signed PATCHARA WATCHARAMAI 20/10/2023	Digitally Signed ANUPONG BANGKIEW 26/10/2023
13	16 Oct 2023	Normal	Digitally Signed NAPHASIN RUANKAEW 16/10/2023	Digitally Signed PATCHARA WATCHARAMAI 20/10/2023	Digitally Signed ANUPONG BANGKIEW 26/10/2023
14	16 Oct 2023	Normal	Digitally Signed NAPHASIN RUANKAEW 16/10/2023	Digitally Signed PATCHARA WATCHARAMAI 20/10/2023	Digitally Signed ANUPONG BANGKIEW 26/10/2023



No	Inspection Date	Survey Result	Inspection By	Check By	Approve By
15	16 Oct 2023	Normal	<b>Digitally Signed</b> JAKKRIT HOMPA 16/10/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 20/10/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 26/10/2023
16	16 Oct 2023	Normal	<b>Digitally Signed</b> CHAIYOTH PREABYODYING 16/10/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 20/10/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 26/10/2023
17	23 Oct 2023	Normal	<b>Digitally Signed</b> CHAIYOTH PREABYODYING 23/10/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 27/10/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 30/10/2023
18	23 Oct 2023	Normal	<b>Digitally Signed</b> JEERASAK THAVORN 23/10/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 27/10/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 30/10/2023
19	23 Oct 2023	Normal	<b>Digitally Signed</b> JAKKRIT HOMPA 23/10/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 27/10/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 30/10/2023
20	23 Oct 2023	Normal	<b>Digitally Signed</b> PEERAPONG SRITHONG 23/10/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 27/10/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 30/10/2023
21	30 Oct 2023	Normal	<b>Digitally Signed</b> PEERAPONG SRITHONG 30/10/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 03/11/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 03/11/2023
22	30 Oct 2023	Normal	<b>Digitally Signed</b> CHAIYOTH PREABYODYING 30/10/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 03/11/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 03/11/2023
23	30 Oct 2023	Normal	<b>Digitally Signed</b> NAPHASIN RUANKAEW 30/10/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 03/11/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 03/11/2023
24	30 Oct 2023	Normal	<b>Digitally Signed</b> JAKKRIT HOMPA 30/10/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 03/11/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 03/11/2023
25	30 Oct 2023	Normal	<b>Digitally Signed</b> JEERASAK THAVORN 30/10/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 03/11/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 03/11/2023

Anomaly Report

Inspection Type: ☒ Patrolling (Vehicle & Crossing) ☐ Ground Patrolling and Leakage Survey

Region: Region9 Method: ☒ Without Gas detector ☐ With Gas detector (specify): \_\_\_\_\_

Document Standard: ☐ ISO 9001 ☐ ISO 14001 ☐ มอก.18001


Pipe Type: \_\_\_\_\_

License Number: กท2310098

Month: October 2023

Anomaly Data	Location	GPS			Anomaly Type	Anomaly Detail	Fix Plan	Status
		North	East	Zone				
13/06/2023	8-10	1,498,818.969	680,468.642	47P	งานก่อสร้างในระยะ ROW	กนอ. ปรับปรุงทางระบายน้ำ	13 Jun 2023	Issue

## Anomaly Detail Record

NO.	Anomaly Date	Location KP	Anomaly Detail	Fix Plan	Status
1	13/06/2023	8-10	ถนน. ปรับปรุงทางระบายน้ำ	13 Jun 2023	Issue
Before Fix Problem					
					
After Fix Problem					
N/A					

## Patrolling Report

Inspection Type: ☒ Patrolling (Vehicle & Crossing) ☐ Ground Patrolling and Leakage Survey

Route Code: RC050504 Survey Route: RC050504 Region: Region9

Method: ☐ Without Gas detector ☐ With Gas detector (specify): \_\_\_\_\_Document Standard: ☐ ISO 9001 ☐ ISO 14001 ☐ มผศ.18001 ☐ Other \_\_\_\_\_

Pipe Type:

License Number: กท2310098

Month: November 2023

No	Inspection Date	Survey Result	Inspection By	Check By	Approve By
1	14 Nov 2023	Normal	Digitally Signed JAKKRIT HOMPA 14/11/2023	Waiting for approve PATCHARA WATCHARAMAI	Waiting for approve ANUPONG BANGKIEW
2	06 Nov 2023	Normal	Digitally Signed NAPHASIN RUANKAEW 06/11/2023	Digitally Signed PATCHARA WATCHARAMAI 12/11/2023	Digitally Signed ANUPONG BANGKIEW 20/11/2023
3	06 Nov 2023	Normal	Digitally Signed JEERASAK THAVORN 06/11/2023	Digitally Signed PATCHARA WATCHARAMAI 12/11/2023	Digitally Signed ANUPONG BANGKIEW 20/11/2023
4	06 Nov 2023	Normal	Digitally Signed PEERAPONG SRITHONG 06/11/2023	Digitally Signed PATCHARA WATCHARAMAI 12/11/2023	Digitally Signed ANUPONG BANGKIEW 20/11/2023
5	06 Nov 2023	Normal	Digitally Signed NAPHASIN RUANKAEW 06/11/2023	Digitally Signed PATCHARA WATCHARAMAI 12/11/2023	Digitally Signed ANUPONG BANGKIEW 20/11/2023
6	06 Nov 2023	Normal	Digitally Signed JAKKRIT HOMPA 06/11/2023	Digitally Signed PATCHARA WATCHARAMAI 12/11/2023	Digitally Signed ANUPONG BANGKIEW 20/11/2023
7	06 Nov 2023	Normal	Digitally Signed CHAIYOTH PREABYODYING 06/11/2023	Digitally Signed PATCHARA WATCHARAMAI 12/11/2023	Digitally Signed ANUPONG BANGKIEW 20/11/2023
8	13 Nov 2023	Normal	Digitally Signed NAPHASIN RUANKAEW 13/11/2023	Digitally Signed PATCHARA WATCHARAMAI 17/11/2023	Digitally Signed ANUPONG BANGKIEW 20/11/2023
9	13 Nov 2023	Normal	Digitally Signed CHAIYOTH PREABYODYING 13/11/2023	Digitally Signed PATCHARA WATCHARAMAI 17/11/2023	Digitally Signed ANUPONG BANGKIEW 20/11/2023
10	13 Nov 2023	Normal	Digitally Signed JAKKRIT HOMPA 13/11/2023	Digitally Signed PATCHARA WATCHARAMAI 17/11/2023	Digitally Signed ANUPONG BANGKIEW 20/11/2023
11	13 Nov 2023	Normal	Digitally Signed PEERAPONG SRITHONG 13/11/2023	Digitally Signed PATCHARA WATCHARAMAI 17/11/2023	Digitally Signed ANUPONG BANGKIEW 20/11/2023
12	20 Nov 2023	Normal	Digitally Signed NAPHASIN RUANKAEW 20/11/2023	Digitally Signed PATCHARA WATCHARAMAI 24/11/2023	Digitally Signed ANUPONG BANGKIEW 02/12/2023
13	20 Nov 2023	Normal	Digitally Signed CHAIYOTH PREABYODYING 20/11/2023	Digitally Signed PATCHARA WATCHARAMAI 24/11/2023	Digitally Signed ANUPONG BANGKIEW 02/12/2023
14	20 Nov 2023	Normal	Digitally Signed NAPHASIN RUANKAEW 20/11/2023	Digitally Signed PATCHARA WATCHARAMAI 24/11/2023	Digitally Signed ANUPONG BANGKIEW 02/12/2023

No	Inspection Date	Survey Result	Inspection By	Check By	Approve By
15	20 Nov 2023	Normal	<b>Digitally Signed</b> JAKKRIT HOMPA 20/11/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 24/11/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 02/12/2023
16	20 Nov 2023	Normal	<b>Digitally Signed</b> JEERASAK THAVORN 20/11/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 24/11/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 02/12/2023
17	20 Nov 2023	Normal	<b>Digitally Signed</b> PEERAPONG SRITHONG 20/11/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 24/11/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 02/12/2023
18	27 Nov 2023	Normal	<b>Digitally Signed</b> CHAIYOTH PREABYODYING 27/11/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 01/12/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 07/12/2023
19	27 Nov 2023	Normal	<b>Digitally Signed</b> JEERASAK THAVORN 27/11/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 01/12/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 07/12/2023
20	27 Nov 2023	Normal	<b>Digitally Signed</b> JAKKRIT HOMPA 27/11/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 01/12/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 07/12/2023
21	27 Nov 2023	Normal	<b>Digitally Signed</b> PEERAPONG SRITHONG 27/11/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 01/12/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 07/12/2023
22	27 Nov 2023	Normal	<b>Digitally Signed</b> NAPHASIN RUANKAEW 27/11/2023	<b>Digitally Signed</b> PATCHARA WATCHARAMAI 01/12/2023	<b>Digitally Signed</b> ANUPONG BANGKIEW 07/12/2023

Anomaly Report

Inspection Type: ☒ Patrolling (Vehicle & Crossing) ☐ Ground Patrolling and Leakage Survey

Region: Region9 Method: ☒ Without Gas detector ☐ With Gas detector (specify): \_\_\_\_\_

Document Standard: ☐ ISO 9001 ☐ ISO 14001 ☐ มอก.18001


Pipe Type: \_\_\_\_\_

License Number: กท2310098

Month: November 2023

Anomaly Data	Location	GPS			Anomaly Type	Anomaly Detail	Fix Plan	Status
		North	East	Zone				
13/06/2023	8-10	1,498,818.969	680,468.642	47P	งานก่อสร้างในระยะ ROW	กนอ. ปรับปรุงทางระบายน้ำ	13 Jun 2023	Issue

## Anomaly Detail Record

NO.	Anomaly Date	Location KP	Anomaly Detail	Fix Plan	Status
1	13/06/2023	8-10	ถนน. ปรับปรุงทางระบายน้ำ	13 Jun 2023	Issue
Before Fix Problem					
					
After Fix Problem					
N/A					



# Cathodic Protection Module Calibration Report

RC:

Location: BV.10

## Test Result of Pipe-to-Soil Voltage Module

TAG. No.: \_\_\_\_\_ Range: 0-5 Volt Accuracy: 0.2% (FS)  
Manufacturer: Red Lion Model: IAMS0001 S/N: \_\_\_\_\_

Standard Signal			Converter Result		SCADA Result	
%	Applied (Volt)	Nominal (mA)	(mA)	%Error	(Volt)	%Error
0	0.000	4.00	4.006	0.038%	0.00	0.000%
25	1.250	8.00	7.995	0.031%	1.25	0.000%
50	2.500	12.00	11.991	0.056%	2.50	0.000%
75	3.750	16.00	15.985	0.094%	3.75	0.040%
100	5.000	20.00	19.983	0.106%	5.00	0.000%

## Test Result of Rectifier Voltage Module

TAG. No.: \_\_\_\_\_ Range: 0-20 Volt Accuracy: 0.2% (FS)  
Manufacturer: Red Lion Model: IAMA3535 S/N: \_\_\_\_\_

Standard Signal			Converter Result		SCADA Result	
%	Applied (Volt)	Nominal (mA)	(mA)	%Error	(Volt)	%Error
0	0.00	4.00	3.997	0.019%	0.00	0.000%
25	5.00	8.00	7.991	0.056%	7.49	12.450%
50	10.00	12.00	11.984	0.100%	14.98	24.900%
75	15.00	16.00	15.981	0.119%	22.47	37.350%
100	20.00	20.00	19.978	0.131%	29.99	49.950%

## Test Result of Rectifier Current Module

Shunt: 50A/50mV

TAG. No.: \_\_\_\_\_ Range: 0-50 mV (0-30A) Accuracy: 0.2% (FS)  
Manufacturer: Red-Lion Model: IAMA3535 S/N: \_\_\_\_\_

Standard Signal			Converter Result		SCADA Result		
%	Applied (mV)	Nominal (mA)	(mA)	%Error	(A)	(mV)	%Error
0	0.0	4.00	4.015	0.094%	0.00	0.002	0.004%
25	12.5	8.00	8.009	0.056%	12.50	12.500	0.000%
50	25.0	12.00	12.005	0.031%	25.02	25.020	0.040%
75	37.5	16.00	16.001	0.006%	37.51	37.514	0.028%
100	50.0	20.00	20.004	0.025%	50.00	50.000	0.000%

## Process Verification Check

	Process Value			Replacement			
	Field	SCADA	%Error	Relay	Converter	Surge	Isolator
Loop Pipe-to-Soil Voltage (V)	-1.021	-0.620	8.02%	-	N	N	N
Loop Rectifier Voltage (V) (DC)	12.600	18.954	31.77%	-	N	N	N
Loop Rectifier Current (A) (DC)	19.000	0.00	-38.00%	-	N	N	N

## Information of Test Equipment

Equipment Name	SIMULATOR	DMM	Power Supply
Manufacturer	YOKOGAWA	Fluke	-
Model no.	CA71-E	789	-
Serial no.	T1P8080	53770027	

Comment : SCADA Voltage Range 0-50V but Field 0-20V

Tested by: \_\_\_\_\_

Witnessed by: \_\_\_\_\_

Date: 23/05/2023

Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_





# Cathodic Protection Module Calibration Report

RC:

Location: BV# SSUT

## Test Result of Pipe-to-Soil Voltage Module

TAG. No.: \_\_\_\_\_ Range: 0-5 Volt Accuracy: 0.2% (FS)  
 Manufacturer: Red Lion Model: IAMS0001 S/N: \_\_\_\_\_

Standard Signal			Converter Result		SCADA Result	
%	Applied (Volt)	Nominal (mA)	(mA)	%Error	(Volt)	%Error
0	0.000	4.00	4.002	0.012%	0.00	0.000%
25	1.250	8.00	7.996	0.025%	1.25	0.000%
50	2.500	12.00	11.997	0.019%	2.50	0.000%
75	3.750	16.00	15.997	0.019%	3.75	0.000%
100	5.000	20.00	19.995	0.031%	5.00	0.000%

## Test Result of Rectifier Voltage Module

TAG. No.: \_\_\_\_\_ Range: 0-20 Volt Accuracy: 0.2% (FS)  
 Manufacturer: Red Lion Model: IAMA3535 S/N: \_\_\_\_\_

Standard Signal			Converter Result		SCADA Result	
%	Applied (Volt)	Nominal (mA)	(mA)	%Error	(Volt)	%Error
0	0.00	4.00	4.001	0.006%	0.00	0.000%
25	5.00	8.00	7.999	0.006%	7.49	12.450%
50	10.00	12.00	11.993	0.044%	14.98	24.900%
75	15.00	16.00	15.996	0.025%	22.49	37.450%
100	20.00	20.00	19.997	0.019%	29.99	49.950%

## Test Result of Rectifier Current Module

Shunt: 50A/50mV

TAG. No.: \_\_\_\_\_ Range: 0-50 mV (0-30A) Accuracy: 0.2% (FS)  
 Manufacturer: Red-Lion Model: IAMA3535 S/N: \_\_\_\_\_

Standard Signal			Converter Result		SCADA Result		
%	Applied (mV)	Nominal (mA)	(mA)	%Error	(A)	(mV)	%Error
0	0.0	4.00	3.998	0.012%	0.002	0.002	0.004%
25	12.5	8.00	7.995	0.031%	12.460	12.460	0.080%
50	25.0	12.00	11.991	0.056%	24.950	24.950	0.100%
75	37.5	16.00	15.990	0.062%	37.490	37.490	0.020%
100	50.0	20.00	19.997	0.019%	49.997	49.997	0.006%

## Process Verification Check

	Process Value			Replacement			
	Field	SCADA	%Error	Relay	Converter	Surge	Isolator
Loop Pipe-to-Soil Voltage (V)	-1.051	-1.050	0.02%	-	N	N	N
Loop Rectifier Voltage (V) (DC)	4.670	6.980	11.55%	-	N	N	N
Loop Rectifier Current (A) (DC)	4.100	4.080	-0.04%	-	N	N	N

## Information of Test Equipmet

Equipment Name	SIMULATOR	DMM	Power Supply
Manufacturer	YOKOGAWA	Fluke	-
Model no.	CA71-E	789	-
Serial no.	T1P8080	53770027	

Comment : SCADA Voltage Range 0-50V but Field 0-20V

Tested by:



Date:

23/05/2023

Witnessed by:

( \_\_\_\_\_ )

Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

# INSPECTION AND MAINTENANCE RECORD FORM OF TRANSFORMER RECTIFIER

(แบบฟอร์มบันทึกการตรวจสอบและบำรุงรักษาหม้อแปลงไฟฟ้าเรียงกระแส)

Division(หน่วยงาน) : Region9

License no. (เลขที่ใบอนุญาต) :

License name (ชื่อใบอนุญาต) :

RC : RC050504

Location (สถานที่) :

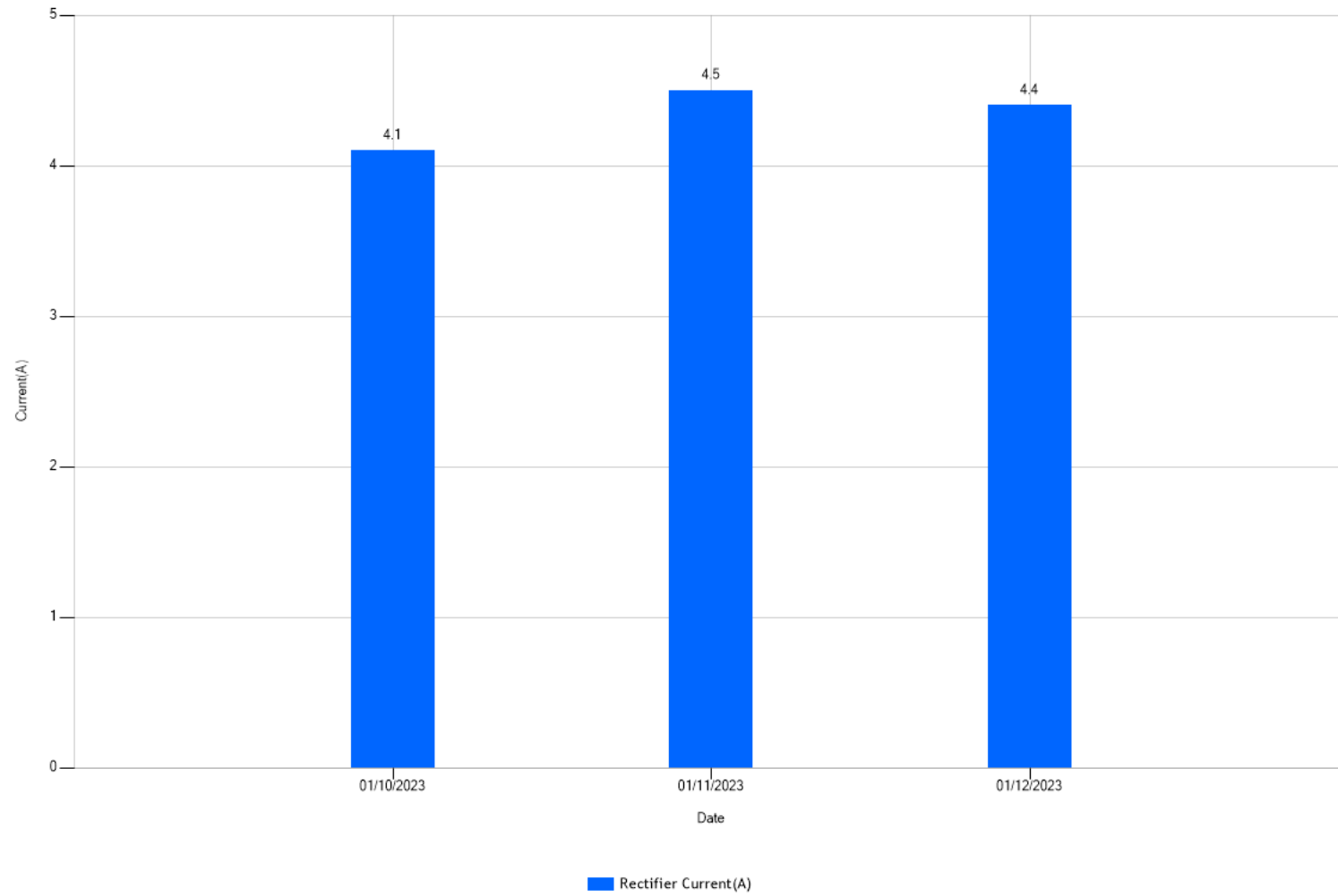
Transformer TAG : 050504-TR-01

Type (ชนิด) : .....

DATE			01/10/2023	01/11/2023	01/12/2023										
AS FOUND	Input	Vac(V)	231.0000	232.0000	223.5000										
		Iac(A)	0.4000	0.4000	0.4000										
	Output	Vdc(V)	4.6700	4.6900	4.7000										
		Idc(A)	4.1000	4.5000	4.4000										
	P/S	On Vdc(-V)	-1.0450	-1.0610	-1.0650										
		Off Vdc(-V)	-0.9370	-0.9400	-0.9400										
	Tap Status/Set Point	C1F3	C1F3	C1F3											
CLEANING		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
FUSE & BREAKER		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
ARRESTOR		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
AS LEFT	Input	Vac(V)													
		Iac(A)													
	Output	Vdc(V)													
		Idc(A)													
	P/S	On Vdc(-V)													
		Off Vdc(-V)													
	Tap Status/Set Point														
KWH															
Second/Round (วินาที/รอบ)															
REMARKS															
Equipment Name															
Cer No/Serial No															
Cal Date															
Next Cal Date															
Inspected by (ผู้ตรวจวัด)		Digitally Signed NAPHASIN R. 26/10/2023	Digitally Signed NAPHASIN R. 23/11/2023	Digitally Signed NAPHASIN R. 26/12/2023											
Checked by (ผู้ตรวจสอบ)		Digitally Signed JAROON K. 04/12/2023	Digitally Signed JAROON K. 04/12/2023	Digitally Signed JAROON K. 28/12/2023											
Approved by (ผู้รับรอง)		Digitally Signed ANUPONG B. 07/12/2023	Digitally Signed ANUPONG B. 07/12/2023												

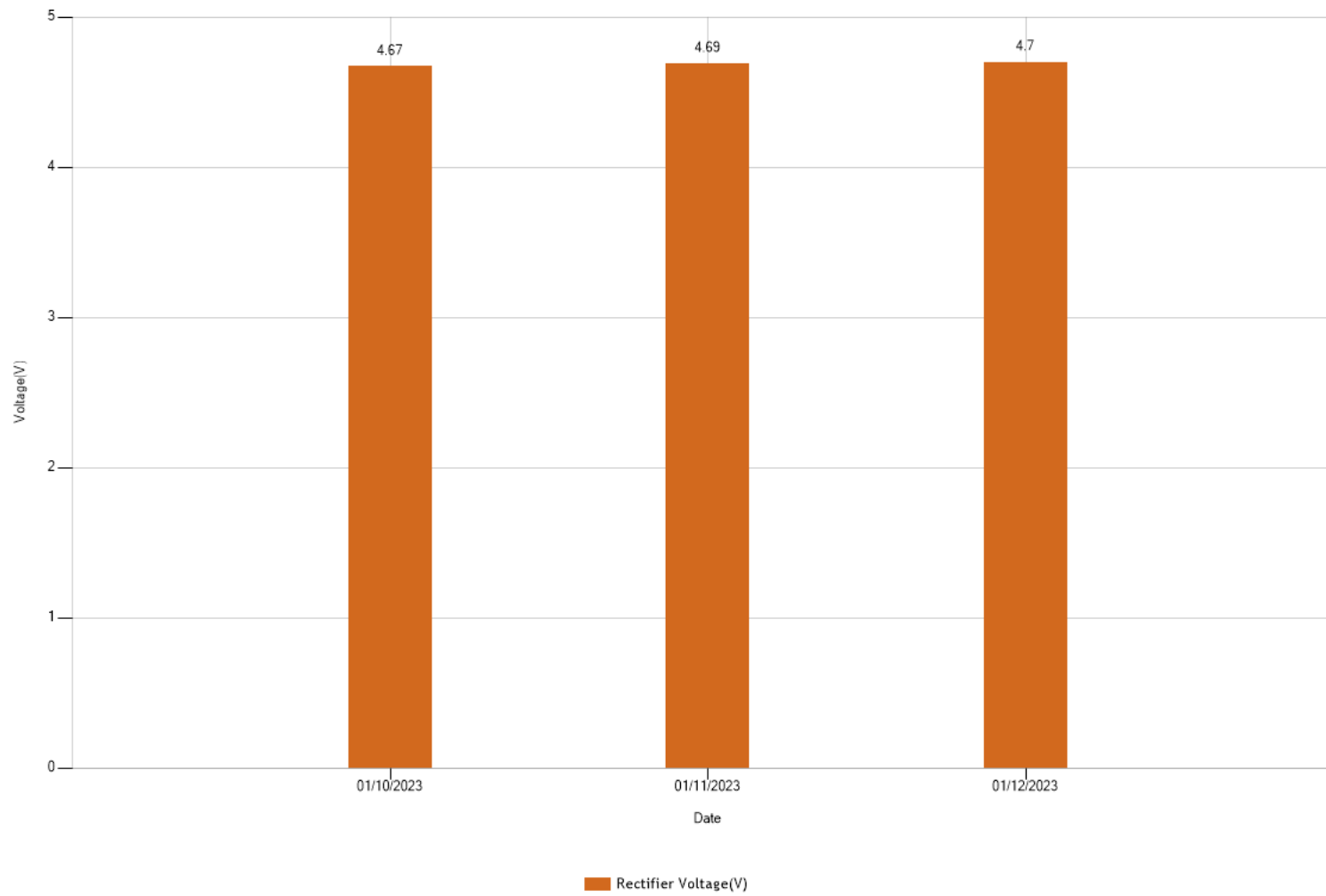
### Rectifier Current(A)

Asset owner : GSM\_Customer    Region : Region9    RC : RC050504    License no : ทท2310098    KP : 12.57365



### Rectifier Voltage(V)

Asset owner : GSM\_Customer    Region : Region9    RC : RC050504    License no : ท2310098    KP : 12.57365

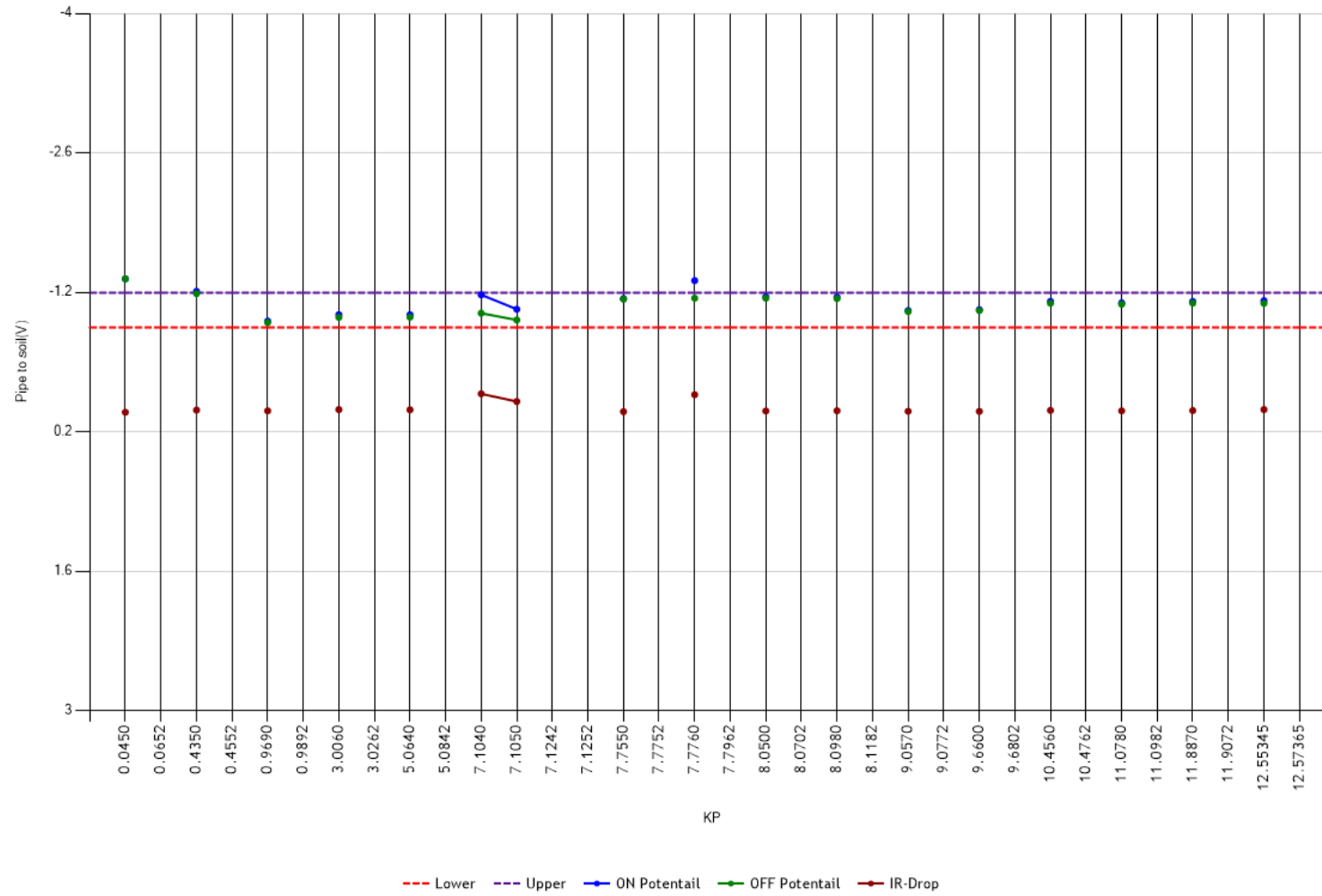


Inspected by (ตรวจวัดโดย) <b>Digitally Signed</b> ( NAPHASIN R. ) 02/06/2023				Checked by (ตรวจสอบโดย) <b>Digitally Signed</b> ( JAROON K. ) 10/07/2023				Approved by (รับรองโดย) <b>Digitally Signed</b> ( ANUPONG B. ) 11/07/2023							
Region (เขต) : Region9				RC: RC050504				Route Name (ชื่อท่อ) :							
License no. (เลขที่ใบอนุญาต) : กท2310098				Measure time (ช่วงเวลาที่วัด) : 05/30/2023 - 05/30/2023											
License name (ชื่อใบอนุญาต) : โครงการท่อส่งก๊าซธรรมชาติไปยังโครงการผลิตพลังงานไอ															
เครื่องมือที่ใช้: <input type="checkbox"/>				1. DMM : _____				Serial No.: _____							
(Equipment)				2. Reference Electrode <input type="checkbox"/> Cu/CuSO4 <input type="checkbox"/> Ag/AgCl											
Note: Soil Condition (สภาพดิน):				W = Wet soil/Water (ดินเปียก/น้ำ) , D = Dry soil (ดินแห้ง), RC = Concrete road (ถนนคอนกรีต) RA = Asphalt road (ถนนลาดยาง), RL = Gravel road (ถนนลูกรัง)											
KP.	LOCATION	GPS Coordinate		Voltage Rating (แรงดันสายส่ง) (kV)	Space (ระยะห่าง) (m)	Type of TP	Pipe/Soil Potential			Casing/Soil Potential		Gas Leak (% LEL)	Zinc Potential Disconnect (V)	Soil Condition (สภาพดิน)	REMARKS
							on DC	off DC	AC	on DC	off DC				
		N	E				(V)	(V)	(V)	(V)	(V)				
0.0450							-1.3390	-1.3390	0.0530			0		D	
0.0652	KP0.045-	13.60452823	100.69773082			AG									
0.4350							-1.2130	-1.1910	0.1230			0		D	
0.4552	KP0.435-	13.60297437	100.69972614			AG									
0.9690							-0.9150	-0.9010	0.3760			0		D	
0.9892	KP0.969-	13.59816153	100.69937317			AA									
3.0060							-0.9800	-0.9530	0.3460			0		D	
3.0262	KP3.006-	13.57992043	100.69690998			AA									
5.0640							-0.9790	-0.9540	0.2260			0		D	
5.0842	KP5.064-	13.56160580	100.69357204			AA									
7.1040							-1.1790	-0.9940	0.0830			0		D	
7.1050							-1.0340	-0.9260	0.0870			0		D	
7.1242	KP7.104-	13.56494498	100.67552054			AA									
7.1252	KP7.105-	13.56494689	100.67551151			AA									
7.7550							-1.1410	-1.1350	0.2310			0		D	
7.7752	KP7.755-	13.56408072	100.67158447			AA									
7.7760							-1.3210	-1.1450	0.2310			0		D	
7.7962	KP7.776-	13.56389274	100.67161125			AA									
8.0500							-1.1580	-1.1450	0.1370			0		D	
8.0702	KP8.05-	13.56154286	100.67117709			AA									
8.0980							-1.1560	-1.1410	0.1670			0		D	
8.1182	KP8.098-	13.56112593	100.67105448			AA									
9.0570							-1.0210	-1.0110	0.3450			0		D	
9.0772	KP9.057-	13.55301697	100.66802722			AA									
9.6600							-1.0300	-1.0210	1.2240			0		D	
9.6802	KP9.66-	13.54820015	100.66542077			AA									
10.4560							-1.1130	-1.0940	0.5430			0		D	
10.4762	KP10.456-	13.54408921	100.66126290			AA									



# Pipe/Soil Potential

Asset owner : GSM\_Customer    Region : Region9    RC : RC050504    License no :



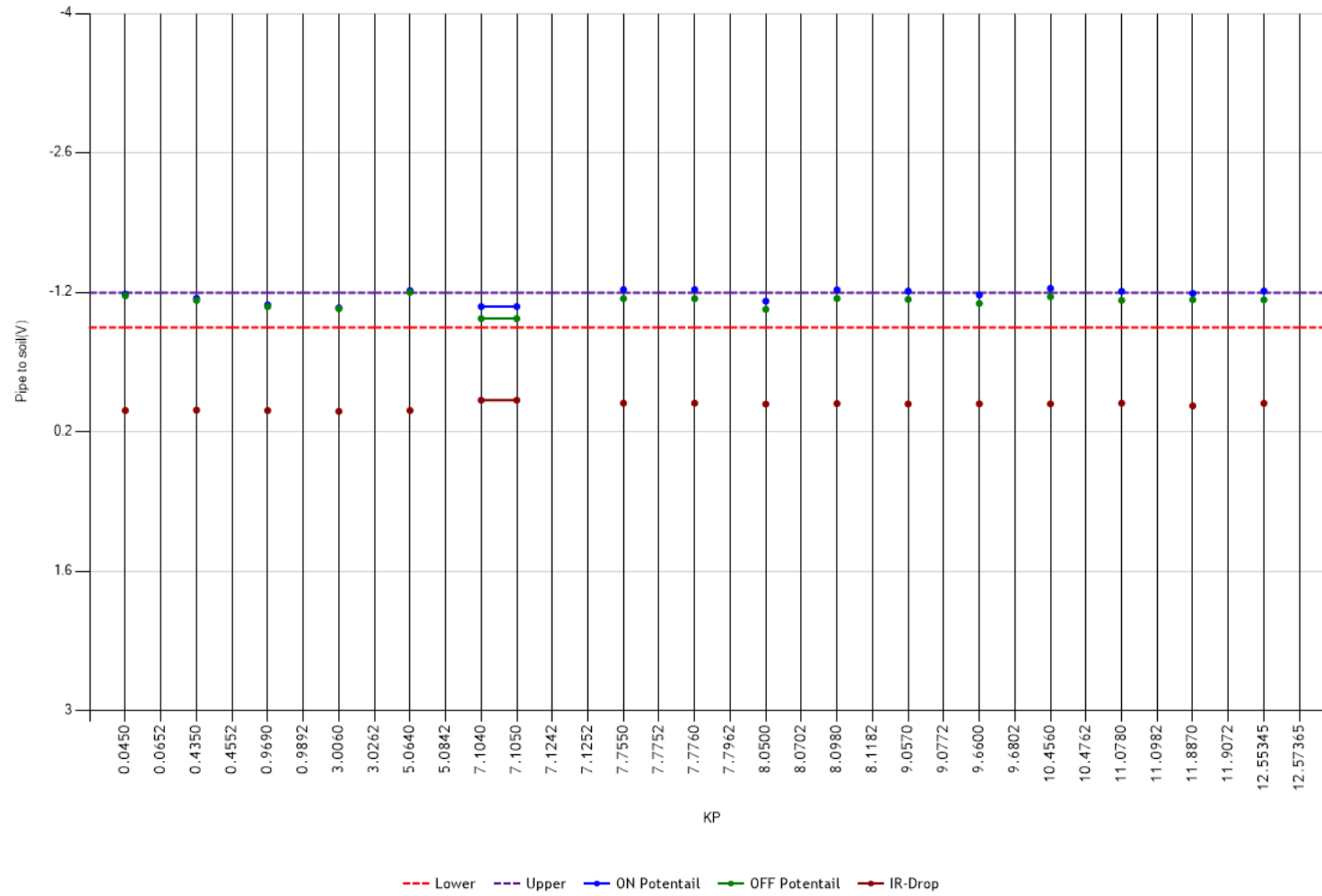
Inspected by (ตรวจวัดโดย) <b>Digitally Signed</b> ( NAPHASIN R. ) 23/11/2023				Checked by (ตรวจสอบโดย) <b>Digitally Signed</b> ( JAROON K. ) 04/12/2023				Approved by (รับรองโดย) <b>Digitally Signed</b> ( ANUPONG B. ) 07/12/2023							
Region (เขต) : Region9				RC: RC050504				Route Name (ชื่อท่อ) :							
License no. (เลขที่ใบอนุญาต) : กท2310098				Measure time (ช่วงเวลาที่วัด) : 11/22/2023 - 11/22/2023											
License name (ชื่อใบอนุญาต) : โครงการท่อส่งก๊าซธรรมชาติไปยังโครงการผลิตพลังงานไอ															
เครื่องมือที่ใช้: <input type="checkbox"/>				1. DMM : _____				Serial No.: _____							
(Equipment)				2. Reference Electrode <input type="checkbox"/> Cu/CuSO4 <input type="checkbox"/> Ag/AgCl											
Note: Soil Condition (สภาพดิน):				W = Wet soil/Water (ดินเปียก/น้ำ) , D = Dry soil (ดินแห้ง), RC = Concrete road (ถนนคอนกรีต) RA = Asphalt road (ถนนลาดยาง), RL = Gravel road (ถนนลูกรัง)											
KP.	LOCATION	GPS Coordinate		Voltage Rating (แรงดันสายส่ง) (kV)	Space (ระยะห่าง) (m)	Type of TP	Pipe/Soil Potential			Casing/Soil Potential		Gas Leak (% LEL)	Zinc Potential Disconnect (V)	Soil Condition (สภาพดิน)	REMARKS
							on DC	off DC	AC	on DC	off DC				
		N	E				(V)	(V)	(V)	(V)	(V)				
0.0450							-1.1860	-1.1690	0.2370			0		D	
0.0652	KP0.045-	13.60452823	100.69773082			AG									
0.4350							-1.1430	-1.1220	0.1490			0		D	
0.4552	KP0.435-	13.60297437	100.69972614			AG									
0.9690							-1.0770	-1.0600	0.1820			0		D	
0.9892	KP0.969-	13.59816153	100.69937317			AA									
3.0060							-1.0480	-1.0390	0.2140			0		D	
3.0262	KP3.006-	13.57992043	100.69690998			AA									
5.0640							-1.2210	-1.2040	0.1540			0		D	
5.0842	KP5.064-	13.56160580	100.69357204			AA									
7.1040							-1.0610	-0.9400	0.1870			0		D	
7.1050							-1.0610	-0.9400	0.1870			0		D	
7.1242	KP7.104-	13.56494498	100.67552054			AA									
7.1252	KP7.105-	13.56494689	100.67551151			AA									
7.7550							-1.2310	-1.1400	0.1750			0		D	
7.7752	KP7.755-	13.56408072	100.67158447			AA									
7.7760							-1.2310	-1.1400	0.1750			0		D	
7.7962	KP7.776-	13.56389274	100.67161125			AA									
8.0500							-1.1150	-1.0330	0.1200			0		D	
8.0702	KP8.05-	13.56154286	100.67117709			AA									
8.0980							-1.2290	-1.1420	0.1520			0		D	
8.1182	KP8.098-	13.56112593	100.67105448			AA									
9.0570							-1.2160	-1.1330	0.8710			0		D	
9.0772	KP9.057-	13.55301697	100.66802722			AA									
9.6600							-1.1770	-1.0920	1.2570			0		D	
9.6802	KP9.66-	13.54820015	100.66542077			AA									
10.4560							-1.2430	-1.1590	1.0920			0		D	
10.4762	KP10.456-	13.54408921	100.66126290			AA									





# Pipe/Soil Potential

Asset owner : GSM\_Customer    Region : Region9    RC : RC050504    License no :









สายงานระบบท่อส่งก๊าซบริษัท ปตท. จำกัด (มหาชน)

## รายงานการตรวจสอบความหนาต่อ Aboveground ด้วย UT

Rev.0

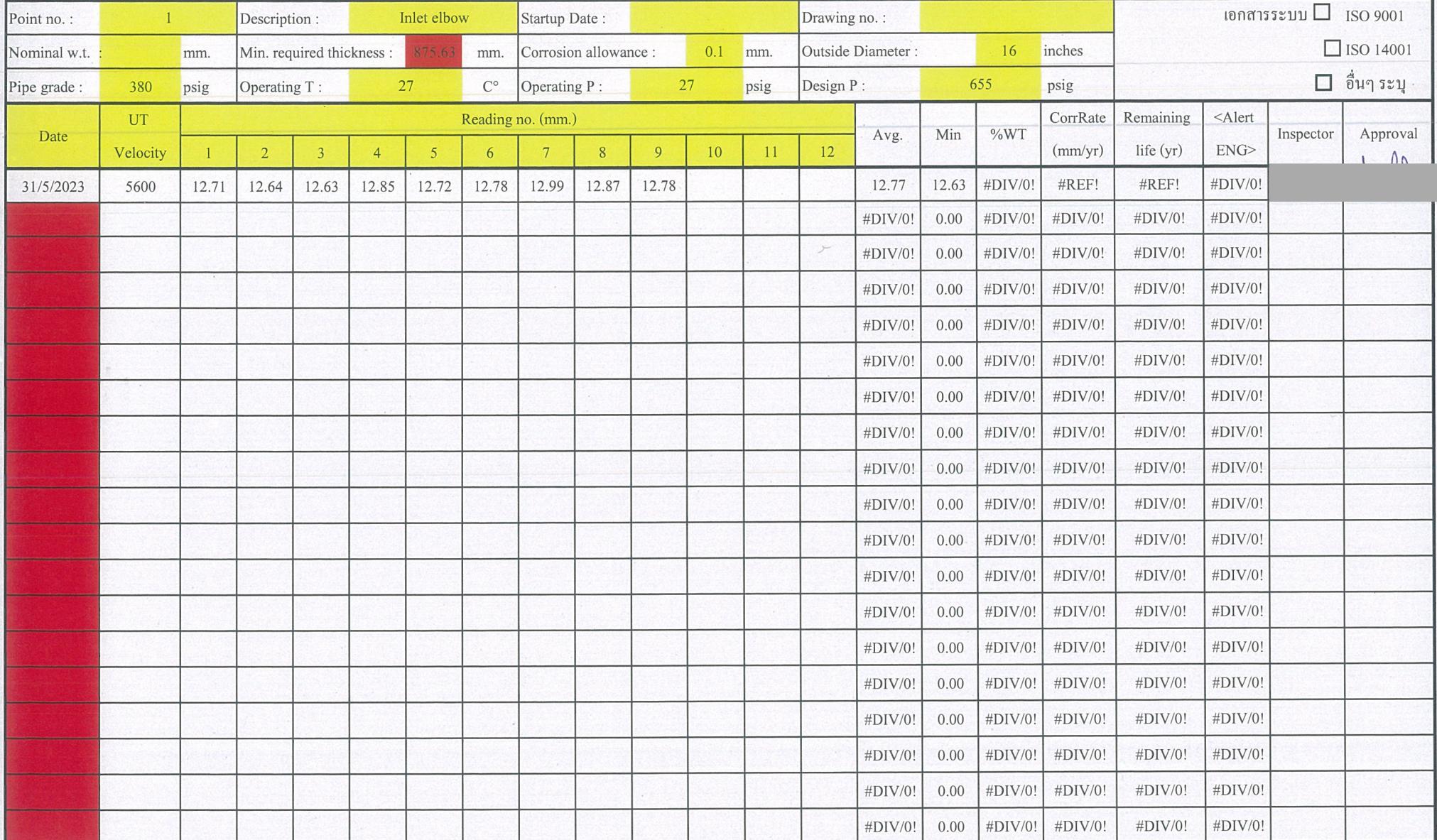
#### ส่วนปฏิบัติการระบบท่อเขต ปท.9-1

Location : RC050504 SSUT

Point no. :	1	Description :	Inlet elbow	Startup Date :		Drawing no. :		เอกสารระบุ <input type="checkbox"/> ISO 9001
Nominal w.t. :	mm.	Min. required thickness :	328.36 mm.	Corrosion allowance :	0.1 mm.	Outside Diameter :	6 inches	<input type="checkbox"/> ISO 14001
Pipe grade :	380 psig	Operating T :	27 C°	Operating P :	27 psig	Design P :	655 psig	<input type="checkbox"/> อื่นๆ ระบุ

[illegible]







## CORROSION UNDER PIPE SUPPORT INSPECTION – DATA COLLECTION FORM

หน่วยงาน : ปท.9 ปกต.3 เอกสารระบบ : ☒ ISO 9002 ☐ ISO 14001 ☐ ISO 18001 ☐ อื่นๆ

Location Details : SSUT Route code : RC050504 Drawing # :

จุดที่ 1 Pipe Description or Line ID : RC050404 Inspection Date : 31/05/2023 .

Photo/รูปภาพ\*

General condition / สภาพโดยทั่วไป :

Water condensed / มีหยดน้ำเกาะท่อ ☐ Yes ☒ No

Surface temperature / อุณหภูมิผิวท่อ N/A °C

Pipe support condition / สภาพท่อใต้ Support :

☒ Good ไม่พบคราบสนิม, จุด Support ยังอยู่ในสภาพดี☐ Minor ตรวจพบคราบน้ำไหลออกมาจาก Support และมีคราบสนิมที่ Support และที่ Pipe / Flange☐ Moderate ตรวจพบ Support ถูกกัดกร่อน โดยเนื้อเหล็ก เริ่มแยกตัวออกเป็นชั้นๆ☐ Severe ตรวจพบ Support ถูกกัดกร่อน โดยเนื้อเหล็กหลุดหายไป

Corrosion condition / สภาพการเกิด Corrosion :

☐ No corrosion ☐ <20% w.t. ☐ 20-80% w.t. ☐ >80% w.t.☐ Defect อื่นๆ เช่น "Dent" "Crack" "etc."

Corrosion size (if depth &gt;20% w.t.) / กรณี &gt;20%w.t. ให้ระบุขนาด :

Depth N/A mm. Length N/A mm. Width N/A mm.

Inspection method / วิธีการที่ใช้ตรวจสอบ :

☐ VT ☐ UT ☐ RT ☐ อื่นๆ

Repair / การแก้ไข :

☐ No repair ☐ Coating with ☐ อื่นๆ

Next inspection interval / ตรวจสอบครั้งต่อไปภายใน :

31/05/2024

Comment / รายละเอียดอื่นๆ

ดำเนินการโดย

ตรวจสอบโดย

รับรองโดย

(ช่างเทคนิค)

(วิศวกรอาวุโส)

(ผู้จัดการแผนกบำรุงรักษาท่อและอุปกรณ์)

08/06/2023

10/07/2023

10/07/2023

\*\*เอกสารดังกล่าวเป็นการลงนามรับรองในระบบ Piping Inspection on Web

# SOIL TO AIR INSPECTION – DATA COLLECTION FORM

หน่วยงาน : ปท.9 ปกต.3 เอกสารระบบ : ☒ ISO 9002 ☐ ISO 14001 ☐ ISO 18001 ☐ อื่นๆ

Location Details : SSUT Route code : RC050504 Drawing # :

จุดที่ 1 Pipe Description or Line ID : RC 050404

Inspection Date : 31/05/2023

Photo/รูปภาพ\*



General condition / สภาพโดยทั่วไป :

Water condensed / มีหยดน้ำเกาะท่อ ☐ Yes ☒ No

Surface temperature / อุณหภูมิผิวท่อ    °C

Coating condition / สภาพ Coating :

☒ Good ☐ Local Disbonding ☐ Extensive Disbonding

☐ Cracked ☐ อื่นๆ

Corrosion condition / สภาพการเกิด Corrosion :

☒ No corrosion ☐ <20% w.t. ☐ 20-80% w.t. ☐ >80% w.t.

☐ Defect อื่นๆ เช่น "Dent" "Crack" "etc."

Corrosion size (if depth >20% w.t.) / กรณี >20%w.t. ให้ระบุขนาด :

Depth N/A mm. Length N/A mm. Width N/A mm.

Inspection method / วิธีการที่ใช้ตรวจสอบ :

☒ VT ☐ UT ☐ RT ☐ อื่นๆ

Repair / การแก้ไข :

☒ No repair ☐ Coating with ☐ อื่นๆ

Next inspection interval / ตรวจสอบครั้งต่อไปภายใน :

31/05/2024

Comment / รายละเอียดอื่นๆ

ดำเนินการโดย

ตรวจสอบโดย

รับรองโดย

(ช่างเทคนิค)

(วิศวกร)

(ผู้จัดการแผนกบำรุงรักษาท่อและอุปกรณ์)

08/06/2023

11/07/2023

11/07/2023

\*\*เอกสารดังกล่าวเป็นการลงนามรับรองในระบบ Piping Inspection on Web