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IT

TECHINT

Engineering & Construction

Solutions with Integrity

TECHINT E&C INNOVATION IN PIPELINE DIGITALIZATION

The Project Details

COLLAHUASI

A challenging project
in the Atacama Desert

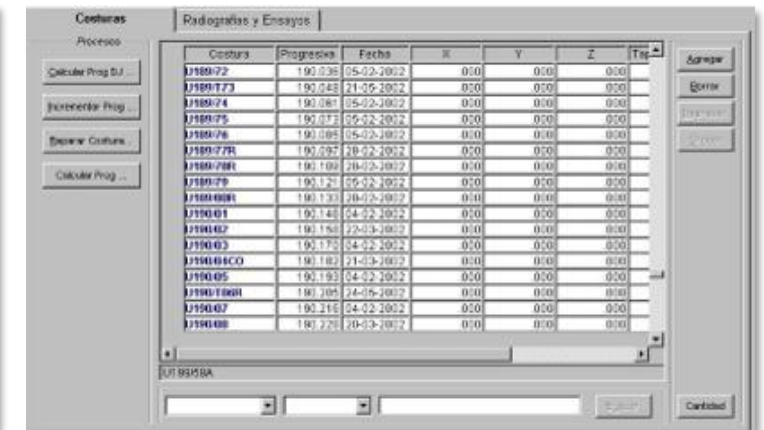


HOW WERE THINGS DONE BEFORE?

TECHINT E&C'S PREVIOUS APPROACH:

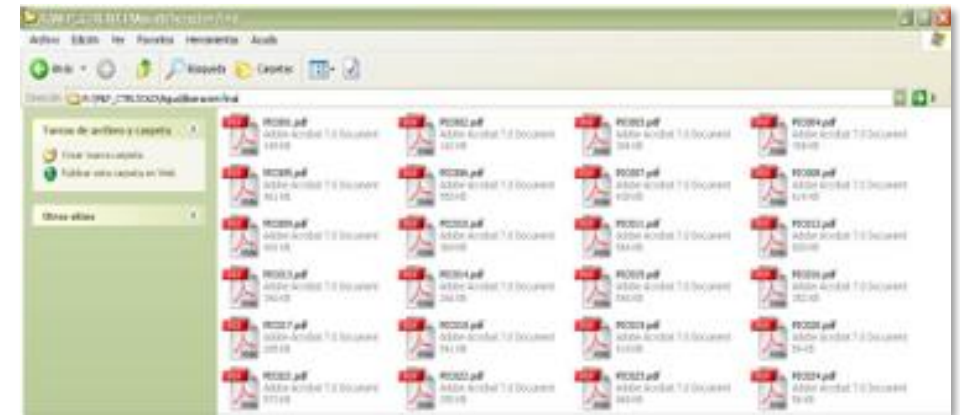
self-developed tool called ControlSold

- Achieved positive results in pipeline monitoring
- Allowed loading documentation from signed records via data entries



IDENTIFIED GAPS:

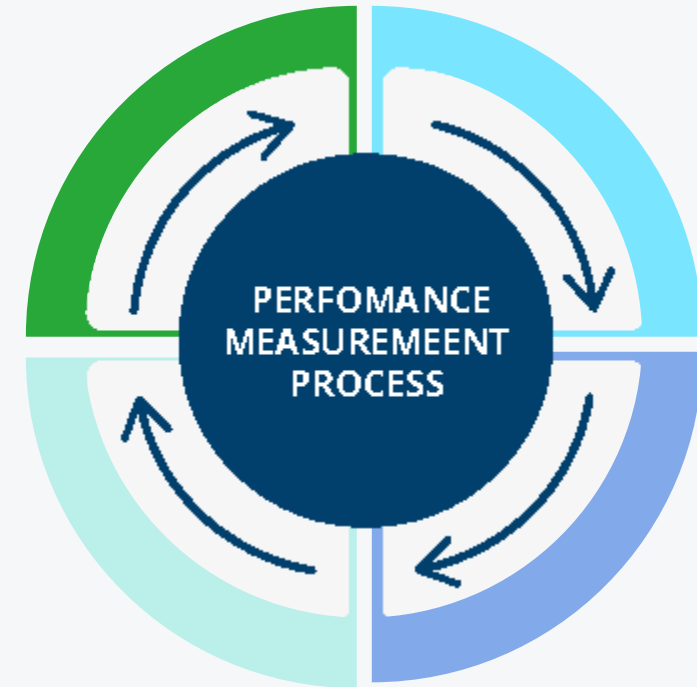
- Absence of mobile module and running locally on job site.
- Lack of direct integration with geographic information system (GIS)
- Excel is used as a traceability system in the projects.
- QC progress was not aligned



THE PLAN

Known for its **expertise in pipeline management and its extensive portfolio** of prominent customers worldwide, **Techint E&C chose Pipetrak IT Software.**

- **SET THE GOALS:** small steps to achieve a large outcome
- **EVALUATE THE PROCESS,** remove the inefficiencies
- **OPERATE BASED ON DATA**
- **GIVE REAL-TIME FIELD DATA** the importance it deserves
- **INITIATE A PARADIGM CHANGE** – there will be resistance!
- **OVERCOMING RESISTANCE** will require training and handholding to see the proof of better outcomes achieved with less effort.



**DEFINE &
PLAN**

- Strategy Formulation

**ALIGN &
EXECUTE**

- Strategy Execution

**REVIEW &
REFINE**

- Continuous Optimization

**MEASURE &
ANALYZE**

- Performance Analysis

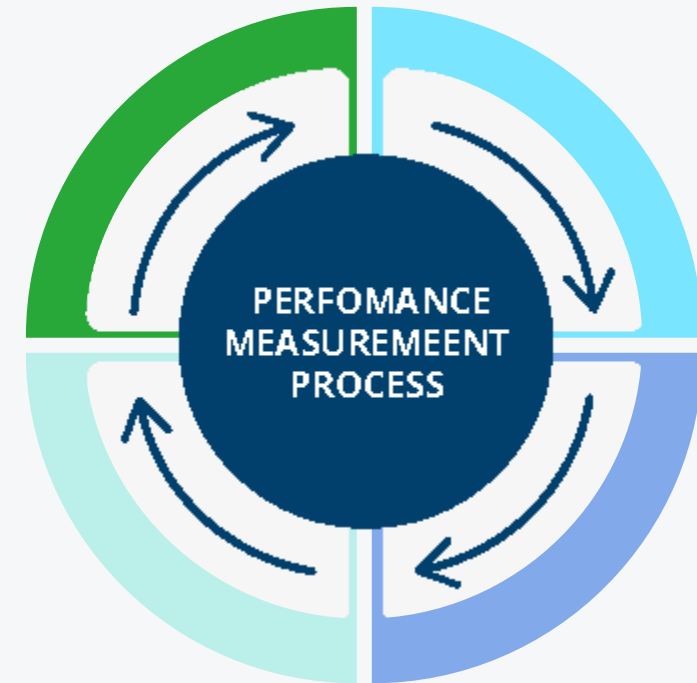
STARTING WITH THE END MIND

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Real-time data for decision support and daily schedules

- As-built data as the project progresses **(not at the end)**
- Full digitalization - no fallbacks onto paper
- Electronic validation and auditable QC
- Final electronic delivery to clients



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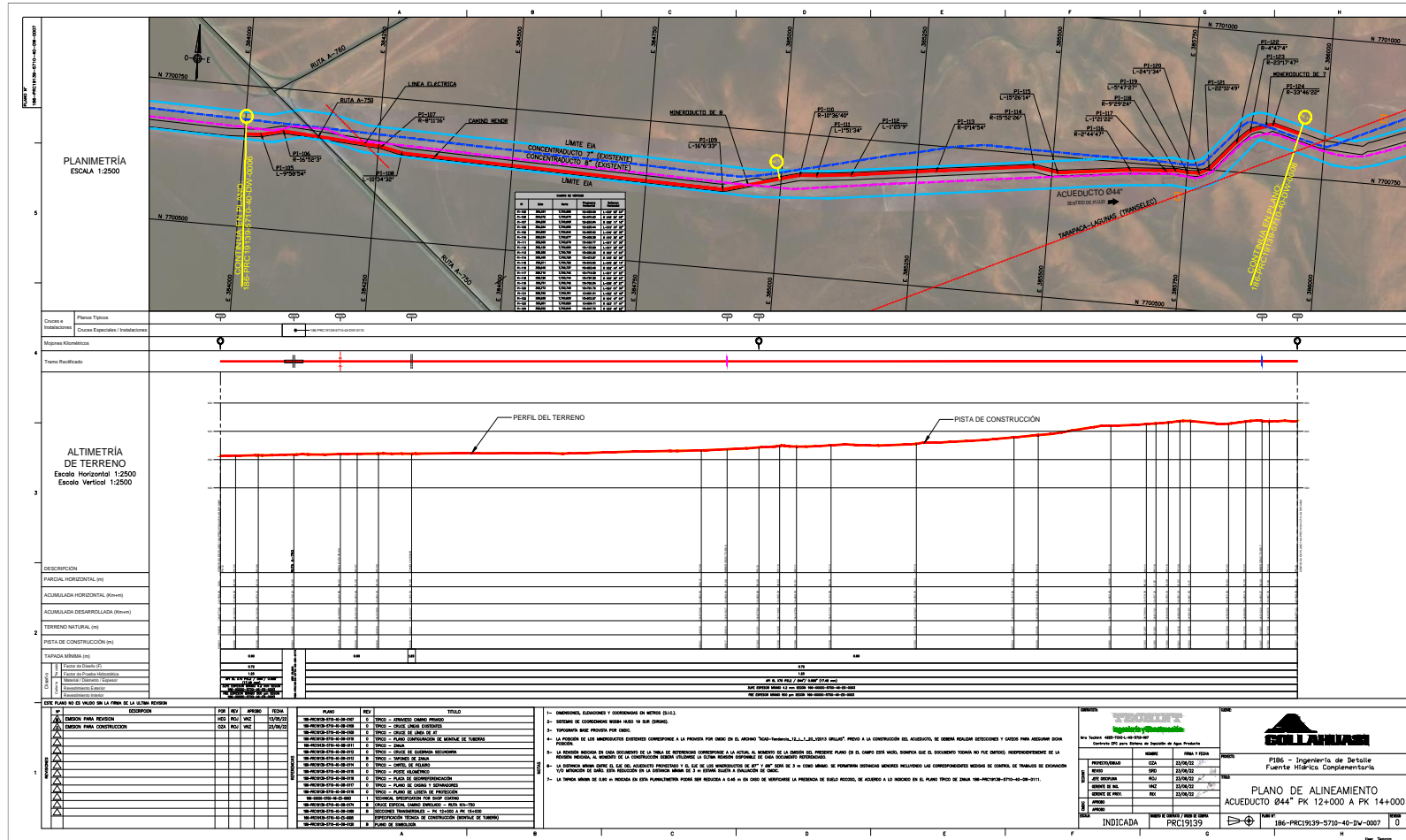
DESIGN DATA

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One of the
key
validation
data



Design
Data



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MATERIAL TRACEABILITY

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Pipetrak TM **IT**

Petro **IT**
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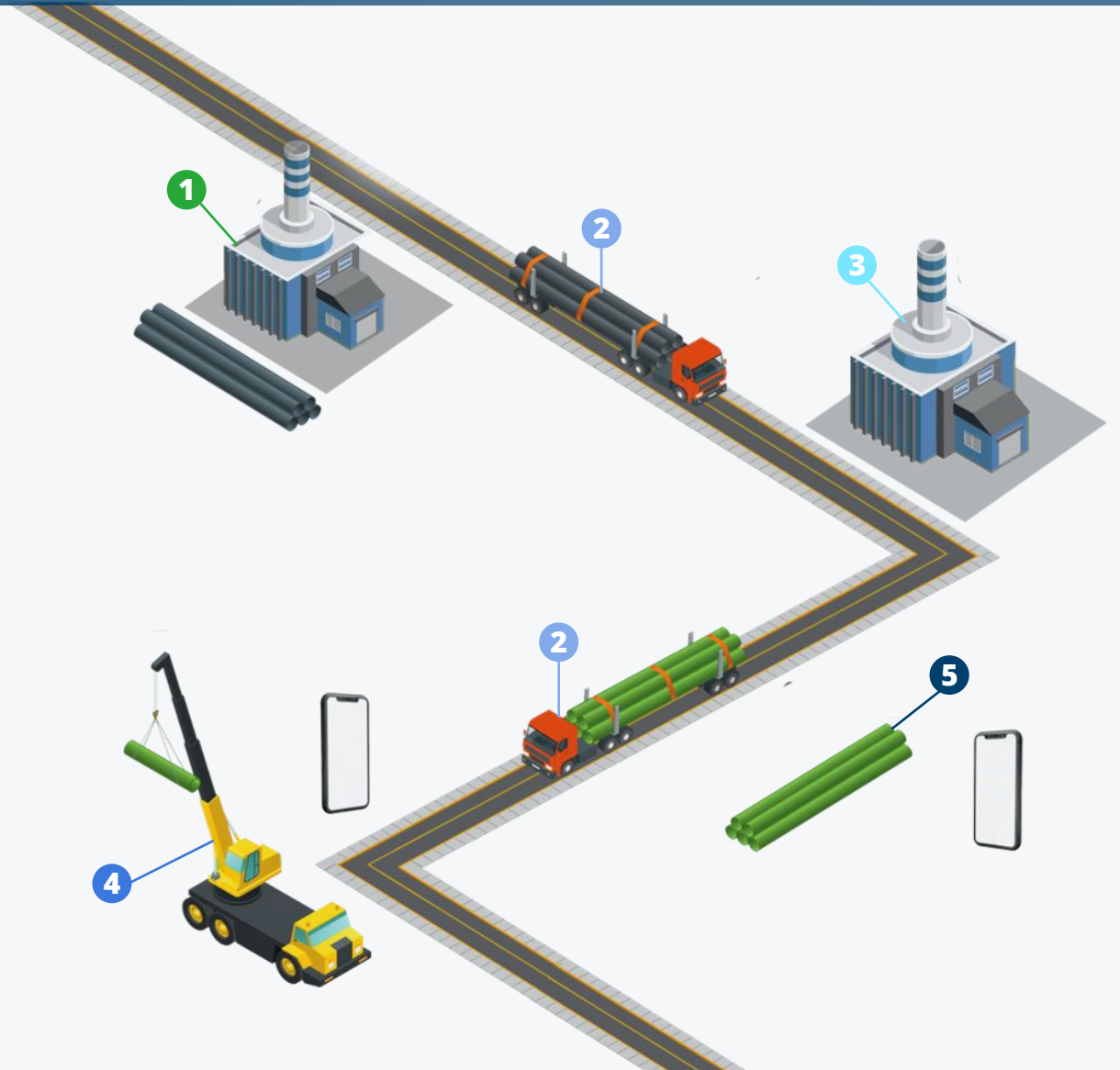
1 MANUFACTURE

2 TRANSPORTATION

3 FABRICATION

4 INSTALLATION

5 WAREHOUSE



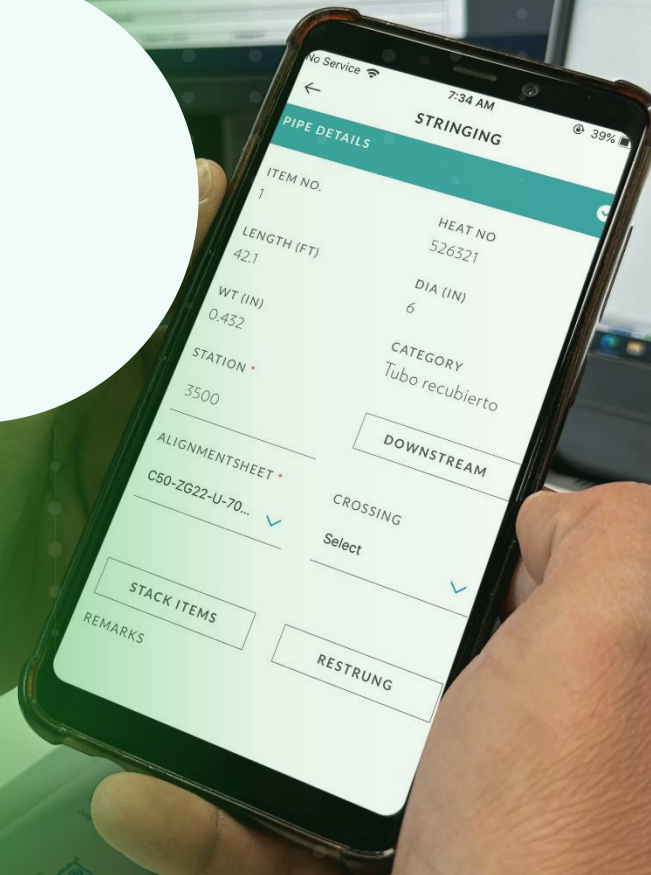
MOBILITY

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- **100+ Mobile Data Capture** devices were in operation during the peak of construction









- **205 people logging** into the system



INSPECTION REPORT

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	COMPAÑÍA MINERA DOÑA INES DE COLLAHUASI		CALIDAD		TECHINT Ingeniería y Construcción				
	Registro de Desfile de Tubería								
	Contrato EPC para Sistema de Impulsión de Agua Producto - C20+								
Código: DES-001_Rev 0					Documento N°: DES-448				
Línea: PS1-PS2-422513			Diámetro: 44.00	KM: PK001	Fecha: 09 Apr 2024				
Sector/ Lugar: Tramo PS1-PS2			De Progresiva: 001+098.12		A Progresiva: 001+113.60				
LISTA DE CONTROL									
Descripción				Verificado por		Comentarios			
				Iniciales	Firma				
Se cumple con la distribución de espesores según la planilla de desfile.				Leandro Alvarez		CUMPLE			
Tubos sobre sacos suelos y por encima del piso 0.10 m, en terreno.				Leandro Alvarez		CUMPLE			
Trazabilidad de la tubería en la parte exterior (y en cada boca de la misma)				Leandro Alvarez		OK			
REGISTRO DE CONTROL									
Secuencia	Progresiva	N° de Tubo	Colada	Espesor	Longitud		Visual Revestimiento	Estado de Bisel	Observaciones
					Teórica	Real			
1	001+098.12	J13071589	513032	26.9700	15.4800	15.4800	Aceptado	Aceptado	1/8
		Supervisor TEIC		Inspector de Calidad TEIC		Trazabilidad TEIC (Recepción)			
Nombre		Cristobal Eras		Leandro Alvarez		Ignacio Santibanez			
Firma									
Fecha		09 Apr 2024		09 Apr 2024		09 Apr 2024			
Generated Date: 17 Apr 2024 23:54:09							Powered by 		

PROJECT PHOTOS

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DASHBOARDS

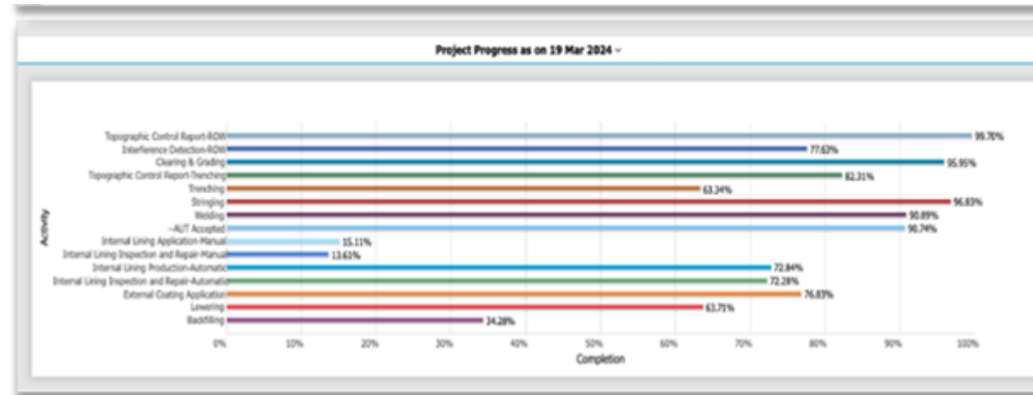
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Lot **All** Section **All** Spread **All**

DPR as on 19 Mar 2024 -

Activity	Unit	Scope	Yesterday	Cumulative
Topographic Control Report-ROW	Meter	194292	0.0000	193700.5400
Interference Detection-ROW	Meter	194292	0.0000	150831.0000
Clearing & Grading	Meter	194292	0.0000	186427.1600
Topographic Control Report-Trenching	Meter	194292	0.0000	159918.0200
Trenching	Meter	194292	368.2500	123057.6150
Stringing	Meter	194292	0.0000	188137.4150
Pipe Cold Bending	No.		20	4434
Welding	No.	12947	28	11768
--AUT Accepted	No.	12947	28	11748
Internal Lining Application-Manual	No.	12947	11	1956
Internal Lining Inspection and Repair-Manual	No.	12947	29	1762



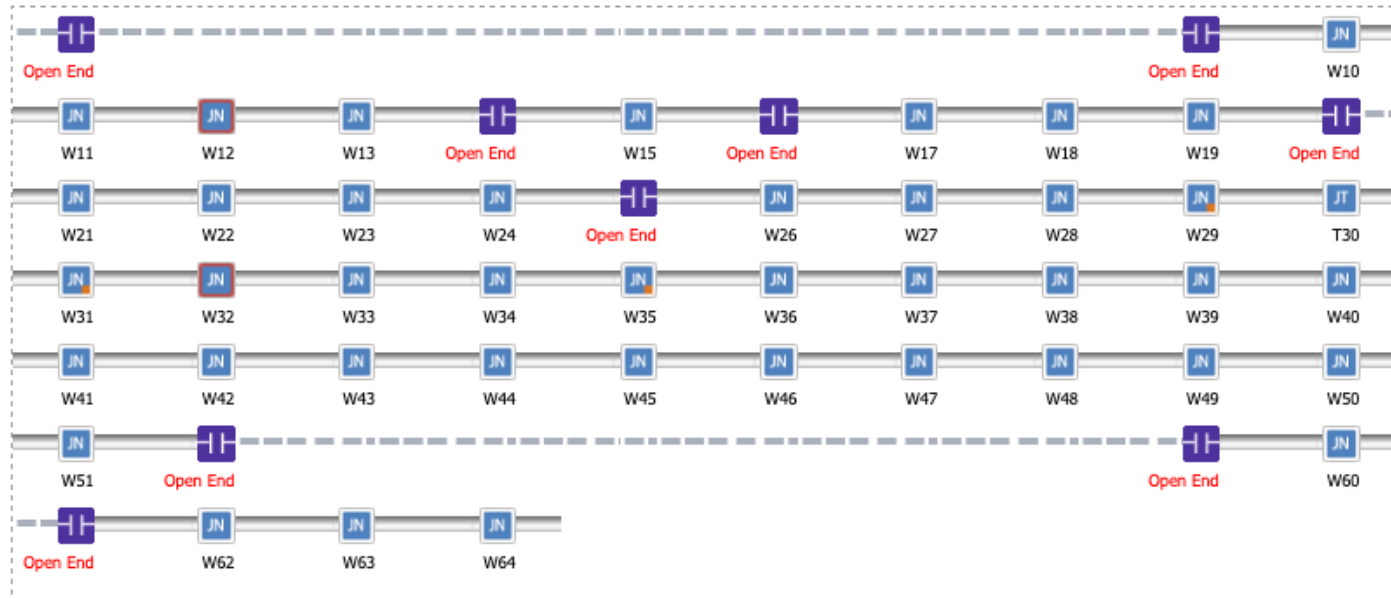
WELDING CHART

Section: PS1-PS2-422513 | Spread: Tramo PS1-PS2 | KP From: PK001 - KP To: PK005

Click on selected welds or [view full report](#)

Open End Normal Repair Reweld Repair ReWeld Crossing Crossing Weld Repair

« Previous **PK001** Next »



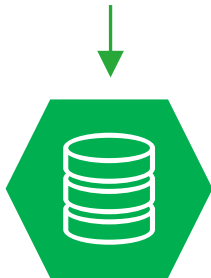
GEOGRAPHIC TRACEABILITY

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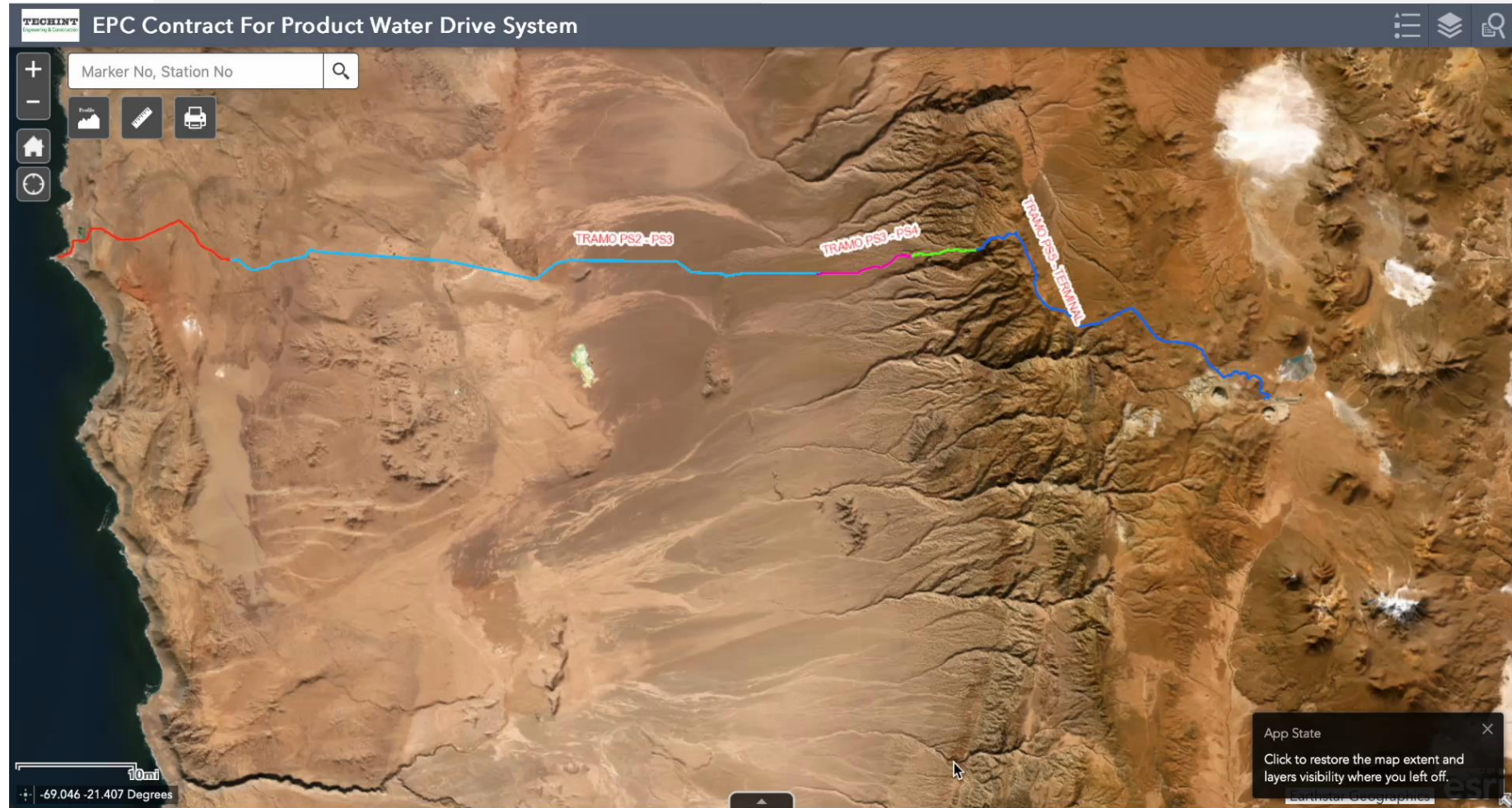
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SPATIAL DATA



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IMPLEMENTATION CHALLENGES

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ENSURE THAT THE SOFTWARE EXTENDS ITS CONTROL PHASES BY:

- Adapting to the needs and working methods of Techint E&C.
- Following the Engineering and Construction stages.
- Incorporating applicable control from the SMEs.

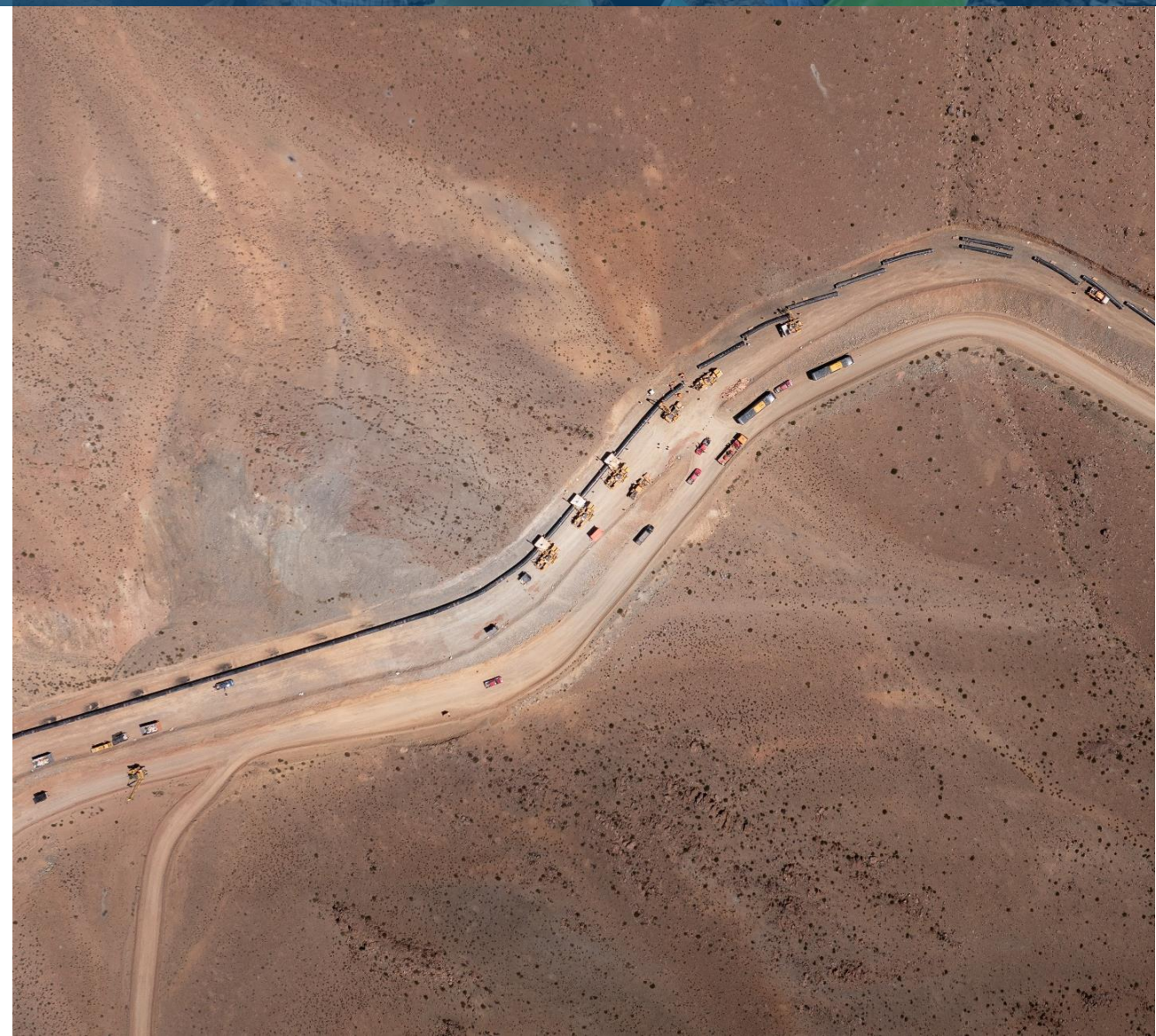
MATERIAL INFORMATION AVAILABILITY:

- Getting material data from suppliers in time.

STAFF FAMILIARITY:

Manage, train, and ensure that the intervening personnel are familiar with:

- *Technological processes*
- *Entry methods*
- *Digital platform (capture and monitoring)*



RESULTS

Strong adaptability demonstrated:

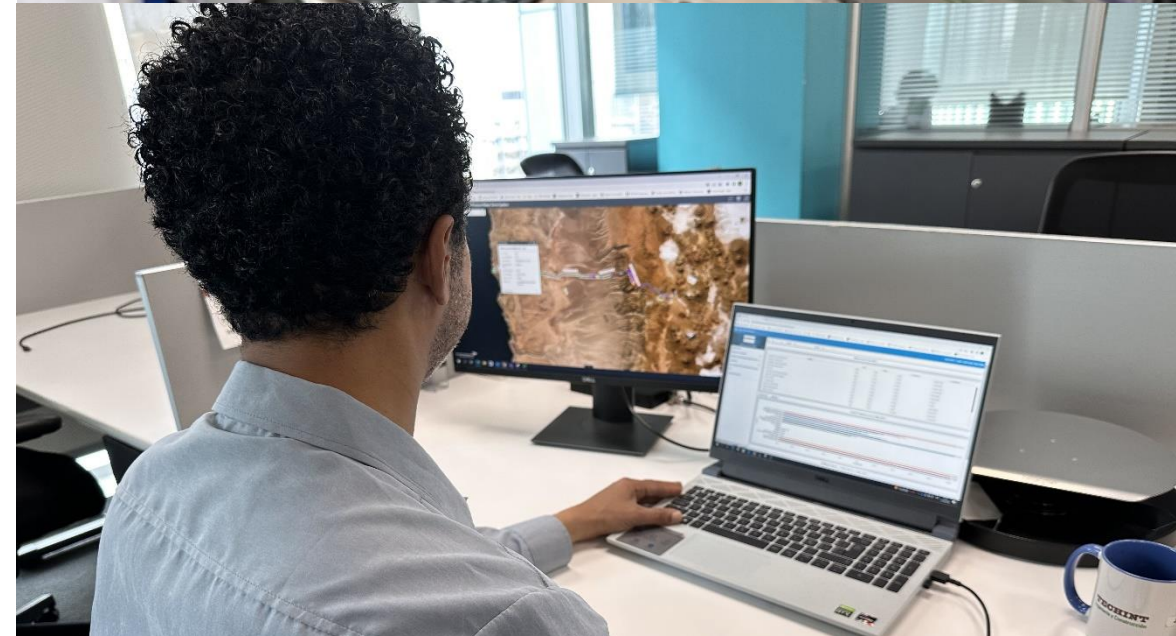
Supervisors, Inspectors, Superintendents, Site Managers, Administrators and Managers demonstrate a strong adaptability to the benefits and use of the program

Significant improvement in Quality Inspection and Control:

Based on current engineering and SMEs at Collahuasi, the accuracy of quality inspection and control has improved significantly.

Effective construction progress reporting:

Planning and Project Control effectively measures and reports the construction progress of the project pipeline through Pipetrak IT.



RESULTS

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THANK YOU!



ALEJANDRO AGUIRRE
TECHINT E&C

*Innovation & Knowledge
Management Manager*



DIANA ROMERO
PETRO IT

Business Development Manager