

TORUS

Owner

INSPECTION AND TEST PLAN

Document No.

SPC-SPC-019

Revision / Date

A · September 29, 2026

Issue purpose

Issued for Review

SPECIFICATIONS · INSPECTION AND TEST PLAN

Rev.	Date	Revision description	Prepared	Reviewed	Approved
A	2026-09-29	Issued for Review			

Notes

1. This Inspection and Test Plan (ITP) is the master list of hold, witness, review and surveillance points for the construction of the . It compiles the points defined in SPC-SPC-001 to SPC-SPC-018, SPC-SPC-020 and CON-CAL-001, grouped by construction phase in the order of CON-RPT-001. Where this list and a specification differ, the more stringent inspection level governs and the Contractor shall raise a request for information.
2. Parties: C Contractor; O Owner (Owner’s Representative or Owner’s Inspector); E Engineer of Record (professional engineer); W , the receiving pipeline operator, with witness rights under the Interconnect and Operating Agreement (HOLD H-01).
3. Codes: H hold point, work shall not proceed past it without written release by that party; W witness point, work may proceed if the party does not attend after proper notice; R document review; S surveillance, random inspection without notice; P perform and record; a dash means no role.
4. Notice: 48 hours for Owner and EOR witness and hold points; 72 hours for any point involving the receiving pipeline operator, given through the Owner’s Representative; 7 days for each hydrostatic test, confirmed 48 hours before the start. Notices shall be given on form QF-19-01.
5. A hold is released only by the signature of the holding party on the record form or on form QF-19-02. The Owner may refuse verbal releases for points involving the receiving pipeline operator.
6. The Contractor shall submit a detailed ITP for each work package 21 days before mobilization, covering every row of this list with its procedure, acceptance criterion and record form. Rows may be added but not deleted or downgraded. The Contractor shall keep a live hold point register and submit it weekly.
7. A failed inspection is a nonconformance under SPC-SPC-001 and the rework is re-inspected at the same level. Re-inspection caused by failed work or missed notice is at the Contractor’s cost. ITP preparation, inspection staff, notices and records are included in pay items 01.03 and 01.05.
8. The list contains 193 points. The Owner holds 109 and witnesses 63; the EOR holds 28 and witnesses 5; the receiving pipeline operator holds 10 and witnesses 28. Its points are limited to the interconnect, custody measurement and the protection of the trunkline, and are planning entries until the Interconnect and Operating Agreement is executed (HOLD H-01).

PHASE A. MOBILIZATION AND PROGRAM APPROVALS

Table 1: SPC-SPC-001, General Requirements and Definitions

ID	Section	Activity	C	O	E	W	Record
HP-01-01	SPC-SPC-001	Kickoff meeting; quality plan, ITP and HSE plan approved before mobilization	P	H	R	-	QF-01-01 minutes; submittals 001-02 to 001-04
HP-01-02	SPC-SPC-001	Operator qualification matrix and drug and alcohol evidence accepted before the first covered task	P	H	-	-	Submittals 001-07, 001-08
HP-01-03	SPC-SPC-001	Permits in place before ground disturbance: construction stormwater coverage under the authority set by HOLD H-17, county permit, crossing and encroachment agreement	P	H	-	R	QF-01-04 permit checklist
HP-01-04	SPC-SPC-001	Critical lift plan approved and pre-lift meeting held	P	H	R	S	Lift plan; QF-01-08 pre-lift checklist
HP-01-05	SPC-SPC-001	As-built redline set complete and signed before mechanical completion	P	H	R	-	QF-01-09 redline acceptance
WP-01-06	SPC-SPC-001	Receiving inspection of Owner-furnished major equipment	P	W	-	-	QF-01-02 receiving report
HP-01-07	SPC-SPC-001	Class 2 and Class 3 changes approved before the changed work is built	P	H	H	H	QF-01-06 change form (W only for Class 3 interface changes)
HP-01-08	SPC-SPC-001	Use-as-is or repair disposition of a nonconformance on a pressure, structural or safety item	P	H	H	-	QF-01-07

PHASE B. CIVIL AND STRUCTURAL

Table 2: SPC-SPC-002, Site Preparation, Clearing and Earthwork

ID	Section	Activity	C	O	E	W	Record
HP-02-01	SPC-SPC-002	Locates complete, trunkline potholed and marked and right-of-way flagged before ground disturbance within 25 ft of the trunkline	P	H	-	H	QF-02-01 locate and pothole record
HP-02-02	SPC-SPC-002	Perimeter controls and construction entrance installed before clearing	P	H	-	-	QF-02-02 SWPPP inspection report
WP-02-03	SPC-SPC-002	Proof-rolling of subgrade under pads, roads, crane pads and foundation areas	P	W	-	-	QF-02-03 proof-roll record
HP-02-04	SPC-SPC-002	Foundation bearing surface inspection before reinforcing steel is placed	P	H	R	-	QF-02-04 subgrade release
HP-02-05	SPC-SPC-002	Undercut or stabilization quantity measured before backfill (pay items 02.04, 02.05, 02.08)	P	H	-	-	QF-02-05 measurement sheet
WP-02-06	SPC-SPC-002	Rock classification (pay item 02.05)	P	W	-	-	QF-02-05
HP-02-07	SPC-SPC-002	Final grading and stabilization accepted before earthwork equipment demobilizes	P	H	R	-	QF-02-06 final grading survey
WP-02-08	SPC-SPC-002	Weekly SWPPP inspection by the Contractor, with Owner surveillance	P	S	-	-	SWPPP inspection log

Table 3: SPC-SPC-003, Cast-in-Place Concrete and Reinforcement

ID	Section	Activity	C	O	E	W	Record
HP-03-01	SPC-SPC-003	Mix designs approved before the first placement of each class	P	R	H	-	Submittal 003-01
HP-03-02	SPC-SPC-003	Pre-pour inspection of forms, reinforcement, anchors, embedments, grounding and conduits (EOR review for critical foundations)	P	H	R	-	QF-03-01 pre-pour checklist
WP-03-03	SPC-SPC-003	Concrete placement and fresh concrete testing	P	W	-	-	QF-03-02 pour record
HP-03-04	SPC-SPC-003	Drilled pier bottom inspection before concrete	P	H	R	-	QF-03-03 pier log
HP-03-05	SPC-SPC-003	T-101 containment leak test	P	H	R	-	QF-03-04 containment test record
HP-03-06	SPC-SPC-003	Anchor bolt as-built survey accepted before equipment or steel is set	P	H	R	-	QF-03-05 anchor bolt survey
WP-03-07	SPC-SPC-003	Grouting of equipment and base plates	P	W	-	-	QF-03-06 grout record
HP-03-08	SPC-SPC-003	28-day strengths accepted, or low-strength investigation closed, before critical foundations are loaded with hydrotest water or operating loads	P	H	R	-	QF-03-07 strength summary

Table 4: SPC-SPC-004, Structural Steel, Canopy and Pipe Supports

ID	Section	Activity	C	O	E	W	Record
HP-04-01	SPC-SPC-004	Shop drawings and pipe support schedule approved before fabrication	P	R	H	-	Submittals 004-02, 004-03
WP-04-02	SPC-SPC-004	Shop inspection of fabricated steel before galvanizing (first article of each support type)	P	W	-	-	QF-04-01 shop inspection
WP-04-03	SPC-SPC-004	Receiving inspection of galvanized steel for coating, damage and marks	P	W	-	-	QF-04-02
HP-04-04	SPC-SPC-004	Pipe support elevation and location survey accepted before pipe is set on supports	P	H	R	-	QF-04-03 support survey
HP-04-05	SPC-SPC-004	Isolation verified at all pipe supports on protected piping before the hydrostatic test	P	H	-	-	QF-04-04 isolation check
WP-04-06	SPC-SPC-004	Canopy erection complete: bolting and plumbness	P	W	-	-	QF-04-05 erection check
HP-04-07	SPC-SPC-004	Final pipe support walkdown after the hydrostatic test: shoes on slide plates, guide gaps, no pipe resting on unintended steel, spring settings if any	P	H	R	-	QF-04-06 support walkdown

Table 5: SPC-SPC-005, Aggregate Surfacing, Roads and Fencing

ID	Section	Activity	C	O	E	W	Record
HP-05-01	SPC-SPC-005	Aggregate and geotextile sources approved before delivery	P	H	-	-	Submittals 005-01, 005-02
HP-05-02	SPC-SPC-005	Underground work in the area complete and surveyed before aggregate is placed	P	H	-	-	QF-05-01 area release
WP-05-03	SPC-SPC-005	Base course density and thickness tests	P	W	-	-	QF-05-02 road test record
WP-05-04	SPC-SPC-005	Culvert bedding and flow line before backfill	P	W	-	-	QF-05-03
WP-05-05	SPC-SPC-005	County driveway inspection	P	W	-	-	County permit sign-off
HP-05-06	SPC-SPC-005	Crane pad acceptance (thickness, density, proof-roll, extent) before the crane sets up for a critical lift	P	H	R	-	QF-05-04 crane pad record
WP-05-07	SPC-SPC-005	Fence and gate final inspection: height, fabric tension, gaps, gate swing, locks, signs and grounding bonds	P	W	-	-	QF-05-05 fence checklist

PHASE C. EQUIPMENT RECEIVING, LIFTING AND SETTING

Table 6: CON-CAL-001, Critical Lift Plans

ID	Section	Activity	C	O	E	W	Record
HP-CAL-01	CON-CAL-001	Contractor critical lift plan for each lift (certified chart, outrigger loads, mat design, rigging certificates, vendor weights, personnel certifications)	P	H	R	-	Lift plan package (SPC-001 submittal 001-09)
HP-CAL-02	CON-CAL-001	Crane annual and pre-lift inspection; operator certification per 29 CFR 1926.1427	P	R	-	-	Inspection records
HP-CAL-03	CON-CAL-001	Ground condition verification and crane mat placement on the day of lift	P	H	-	-	Pre-lift checklist
HP-CAL-04	CON-CAL-001	Pre-lift meeting and critical lift permit signed	P	H	-	-	Signed critical lift permit
WP-CAL-05	CON-CAL-001	Lift execution	P	W	-	-	Lift log

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Table 7: SPC-SPC-017, Mechanical Equipment Setting

ID	Section	Activity	C	O	E	W	Record
WP-17-01	SPC-SPC-017	Receiving inspection of each equipment item	P	W	-	-	QF-17-01
HP-17-01	SPC-SPC-017	Foundation and anchor bolt survey accepted before setting	P	H	R	-	QF-17-03
HP-17-02	SPC-SPC-017	Critical lift plan approved and pre-lift meeting held before each critical lift (H-101, V-101, SK-110)	P	H	R	-	Submittal 17-02, CON-CAL-001
WP-17-02	SPC-SPC-017	Setting, leveling and anchoring of each item	P	W	-	-	QF-17-04
HP-17-03	SPC-SPC-017	Flange alignment at equipment nozzles before bolt-up (PCC-1 Appendix E)	P	H	-	-	QF-17-05
WP-17-03	SPC-SPC-017	Grout placement	P	W	-	-	QF-17-06
WP-17-04	SPC-SPC-017	Quick-opening closure and pressure warning interlock tests (V-101, PR-101)	P	W	-	-	QF-17-07
WP-17-05	SPC-SPC-017	H-101 bath fill and fluid analysis	P	W	-	-	QF-17-08
HP-17-04	SPC-SPC-017	T-101 containment liner and containment integrity accepted before the tank is set	P	H	R	-	QF-17-09

Table 8: SPC-SPC-016, Prefabricated Buildings B-101 and B-102

ID	Section	Activity	C	O	E	W	Record
HP-16-01	SPC-SPC-016	Building general arrangement, structural calculations and anchorage reactions approved before fabrication and before foundation construction	-	R	H	-	Submittals 16-01 to 16-03
HP-16-02	SPC-SPC-016	FAT of B-101 and B-102, with integrated analyzer and control systems, before release for shipment	S	H	R	W	FAT report 16-08
WP-16-01	SPC-SPC-016	Receiving inspection on arrival	P	W	-	-	QF-16-01
WP-16-02	SPC-SPC-016	Setting, leveling and anchoring	P	W	-	-	QF-16-02
HP-16-03	SPC-SPC-016	Site acceptance (ventilation rate, gas detectors, heating and cooling, alarms) before process gas is introduced into B-101	P	H	R	-	QF-16-03

PHASE D. PIPING, WELDING, NDE AND COATING

Table 9: SPC-SPC-006, Piping Fabrication and Installation

ID	Section	Activity	C	O	E	W	Record
HP-06-01	SPC-SPC-006	Receiving, traceability, bending, backfill and bolting procedures approved (submittals 06-02, 06-04, 06-06, 06-08) before the related work	P	R	H	-	Submittal log
HP-06-02	SPC-SPC-006	Release to excavate within 50 ft of the trunkline: locates, potholes, operator's representative on site	P	H	-	H	QF-06-02
WP-06-01	SPC-SPC-006	Receiving inspection and MTR review of OFM line pipe and CFM fittings	P	W	-	-	QF-06-01
WP-06-02	SPC-SPC-006	First field cold bend qualification	P	W	R	-	QF-06-04
WP-06-03	SPC-SPC-006	Fit-up of the first weld of each procedure and of all tie-in and insulating joint welds	P	W	-	-	QF-06-03
HP-06-03	SPC-SPC-006	Trench inspection before lowering-in: depth, width, bottom, clearances, bedding	P	H	-	-	QF-06-05
HP-06-04	SPC-SPC-006	Coating holiday test immediately before lowering-in	P	H	-	-	Holiday record, SPC-SPC-009
HP-06-05	SPC-SPC-006	Lowering-in release	P	H	-	-	QF-06-05
HP-06-06	SPC-SPC-006	Release to backfill: NDE accepted, field joints coated and holiday-free, as-built survey complete	P	H	-	-	QF-06-05, survey
WP-06-04	SPC-SPC-006	Compaction tests under roads and structures	P	W	-	-	QF-06-08
WP-06-05	SPC-SPC-006	Insulating joint tests on receipt, after welding and after hydrostatic test	P	W	R	-	QF-06-06
WP-06-06	SPC-SPC-006	Piping-to-equipment nozzle alignment check with bolts free	P	W	-	-	QF-06-07
HP-06-07	SPC-SPC-006	Bolt-up of the first joint of each size and class (procedure demonstration)	P	H	-	-	QF-06-07
HP-06-08	SPC-SPC-006	Final internal cleaning run before hydrostatic test	P	H	-	-	QF-06-09
HP-06-09	SPC-SPC-006	Flange register complete and all joints yellow-tagged before hydrostatic test	P	H	-	-	Flange register
HP-06-10	SPC-SPC-006	Blind register walkdown: all test blinds removed and permanent gaskets installed before gas-in	P	H	R	W	Blind register

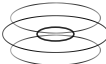
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ID	Section	Activity	C	O	E	W	Record
HP-06-11	SPC-SPC-006	Crossing of the trunkline or a foreign line: clearance verified before backfill	P	H	-	H	QF-06-05, survey
WP-06-07	SPC-SPC-006	As-built survey of buried piping before backfill	P	W	R	-	Survey data
WP-06-08	SPC-SPC-006	S1 receiving and segregation inspection: dual certification, storage apart from carbon steel, tool control	P	W	-	-	QF-06-10
HP-06-12	SPC-SPC-006	S1 spool cleaning, passivation and free-iron test accepted before erection	P	H	R	-	QF-06-11
WP-06-09	SPC-SPC-006	VS-101 erection, strake orientation, base drain valve and collection pan	P	W	-	-	Equipment setting record, SPC-SPC-017

Table 10: SPC-SPC-007, Welding

ID	Section	Activity	C	O	E	W	Record
HP-07-01	SPC-SPC-007	WPS and PQR package and welding quality plan approved before qualification welding	P	R	H	-	Submittals 07-01, 07-02
HP-07-02	SPC-SPC-007	Procedure qualification welding and mechanical testing, including Charpy and hardness	P	H	R	-	PQR, QF-07-01
HP-07-03	SPC-SPC-007	Welder qualification tests at site	P	H	-	-	QF-07-02
WP-07-01	SPC-SPC-007	First production weld of each WPS: preheat, interpass, amperage, voltage and travel speed measured	P	W	-	-	QF-07-03
WP-07-02	SPC-SPC-007	Weekly consumable storage and oven audit	P	S	-	-	QF-07-04
HP-07-04	SPC-SPC-007	Tie-in welds and any approved untested closure weld: fit-up, preheat and welding	P	H	R	W	QF-07-03, QF-06-03
HP-07-05	SPC-SPC-007	Authorization of each weld repair or cut-out	P	H	-	-	QF-07-05
HP-07-06	SPC-SPC-007	Hot work permit within 50 ft of live gas and within the trunkline right-of-way	P	H	-	H	Hot work permit
WP-07-03	SPC-SPC-007	Visual inspection of completed welds (100 % by Contractor CWI, sampling by Owner)	P	S	-	-	QF-07-06
HP-07-07	SPC-SPC-007	Weld map complete and reconciled with NDE reports before the hydrostatic test of each section	P	H	R	-	Weld map, NDE register
HP-07-08	SPC-SPC-007	S1 WPS and PQR approved and S1 welder qualification tests at site before any S1 production welding	P	H	H	-	Submittal 07-13, QF-07-02
WP-07-04	SPC-SPC-007	First S1 production weld of each welder: purge oxygen, interpass, inside heat tint and ferrite number checked	P	W	-	-	QF-07-07

Table 11: SPC-SPC-008, Nondestructive Examination

ID	Section	Activity	C	O	E	W	Record
HP-08-01	SPC-SPC-008	NDE subcontractor, procedures, technique sheets and radiation safety plan approved before any production NDE	P	H	R	-	Submittals 08-01 to 08-03, 08-08
HP-08-02	SPC-SPC-008	AUT qualification trial and approval, only if AUT is proposed	P	H	H	-	QF-08-05
WP-08-01	SPC-SPC-008	Technique demonstration for each RT technique sheet: IQI sensitivity, density or SNR	P	W	-	-	QF-08-01
WP-08-02	SPC-SPC-008	Lamination scans of field-cut bevels and branch locations (sampled)	P	S	-	-	QF-08-04
HP-08-03	SPC-SPC-008	NDE of tie-in welds and any approved untested closure weld (RT, UT and MT)	P	H	R	W	QF-08-02, QF-08-03
HP-08-04	SPC-SPC-008	Re-examination of each repaired or cut-out weld	P	H	-	-	QF-08-02
HP-08-05	SPC-SPC-008	Owner NDE reviewer acceptance of each weld before coating, lowering-in, backfill or pressure test	P	H	-	-	NDE register
HP-08-06	SPC-SPC-008	Final NDE dossier and register reconciled to the weld map for each test section	P	H	R	-	Submittal 08-10
HP-08-07	SPC-SPC-008	100 % PMI of S1 components and welds accepted before the S1 system is released for testing	P	H	-	-	QF-08-07
WP-08-03	SPC-SPC-008	S1 ferrite measurement on the first production weld of each welder and WPS	P	W	-	-	QF-08-07
HP-08-08	SPC-SPC-008	100 % RT (or approved UT) of every S1 butt weld, shop and field, accepted before the S1 system is released for testing	P	H	-	-	QF-08-02

Table 12: SPC-SPC-009, External Coating of Buried Pipe and Field Joints

ID	Section	Activity	C	O	E	W	Record
HP-09-01	SPC-SPC-009	Coating application procedure and products approved (09-S1 to 09-S3) before any field coating	P	R	H	-	Approved procedure
HP-09-02	SPC-SPC-009	Procedure qualification test joint for each field system and each applicator crew	P	H	R	-	QF-09-04
WP-09-01	SPC-SPC-009	Receipt inspection of Owner-furnished coated pipe	P	W	-	-	Pipe tally, QF-09-05

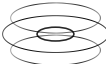
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ID	Section	Activity	C	O	E	W	Record	
WP-09-02	SPC-SPC-009	Surface preparation and profile, first 5 field joints and 1 in 20 thereafter	P	W	-	-	QF-09-01	
HP-09-03	SPC-SPC-009	Jeeping and repair acceptance of each section immediately before lowering-in	P	H	-	-	QF-09-02	
HP-09-04	SPC-SPC-009	Coating of outlet lateral field joints and IJ-102 within 50 ft of the trunkline right-of-way, before backfill	P	H	-	W	QF-09-02	
WP-09-03	SPC-SPC-009	Soil-to-air transition coating at each riser	P	W	-	-	QF-09-01	
HP-09-05	SPC-SPC-009	Coating records complete and accepted before backfill release	P	H	R	-	QF-09-01 to QF-09-03	

Table 13: SPC-SPC-010, Above-Ground Painting

ID	Section	Activity	C	O	E	W	Record	
HP-10-01	SPC-SPC-010	Painting procedure and products approved (10-S1, 10-S2) before any painting	P	R	H	-	Approved procedure	
HP-10-02	SPC-SPC-010	Surface preparation accepted (cleanliness, profile, salts) before primer, on the first spool of each crew and each shop	P	H	-	-	QF-10-01	
WP-10-01	SPC-SPC-010	Routine surface preparation, one item in ten	P	W	-	-	QF-10-01	
WP-10-02	SPC-SPC-010	Routine DFT of each coat	P	W	-	-	QF-10-02	
WP-10-03	SPC-SPC-010	Pull-off adhesion test on the first spool of each crew	P	W	-	-	QF-10-03	
WP-10-04	SPC-SPC-010	Stainless walk-down: S1 piping and VS-101 unpainted, free of zinc and chloride contamination, isolated from carbon steel	P	W	-	-	QF-10-01	
HP-10-03	SPC-SPC-010	Final coating acceptance before mechanical completion, including pipe marking and color schedule	P	H	-	-	QF-10-04	

PHASE E. ELECTRICAL, INSTRUMENTATION AND CATHODIC PROTECTION

Table 14: SPC-SPC-013, Electrical Installation in Hazardous Locations

ID	Section	Activity	C	O	E	W	Record	
HP-13-01	SPC-SPC-013	Hazardous location compliance matrix and product data approved before installation in classified areas	P	R	H	-	Submittals 13-02, 13-03	
WP-13-01	SPC-SPC-013	Underground conduit and ground grid before backfill (depth, separation, connections)	P	W	S	-	QF-13-03	
WP-13-02	SPC-SPC-013	First seal pour of each crew, then 20 % of pours	P	W	-	-	QF-13-01	
HP-13-02	SPC-SPC-013	All seals inspected before circuits through classified areas are energized	P	H	S	-	QF-13-01	
HP-13-03	SPC-SPC-013	Station grid ground resistance accepted before utility service connection	P	H	R	-	QF-13-04, submittal 13-08	
WP-13-03	SPC-SPC-013	Insulation resistance and continuity tests of feeders	P	W	-	-	QF-13-02	
HP-13-04	SPC-SPC-013	NETA ATS reports accepted before each panelboard, UPS and ATS is energized	P	H	R	-	Submittal 13-10	
WP-13-04	SPC-SPC-013	ATS transfer test and G-101 load test	P	W	S	-	QF-13-05	
WP-13-05	SPC-SPC-013	Autonomy tests of the 24 VDC battery system and UPS-101; generator restart sequence	P	W	R	-	QF-13-06	
HP-13-05	SPC-SPC-013	Final classified-area walkdown (every device, seal, cover bolt, breather, drain and label) before gas is introduced	P	H	H	-	QF-13-07	

Table 15: SPC-SPC-014, Instrumentation Installation, Tubing and Calibration

ID	Section	Activity	C	O	E	W	Record	
HP-14-01	SPC-SPC-014	Calibration procedure and standards approved (TAR 4:1, current certificates) before any calibration	P	H	R	R	Submittal 14-04	
WP-14-01	SPC-SPC-014	Tube fitting installation and gap gauge inspection; 10 % random sample by the Owner	P	W	-	-	QF-14-06	
HP-14-02	SPC-SPC-014	Ultrasonic meter and meter tube installation check (serial numbers, direction, orientation, cleanliness) before flanges are closed	P	H	R	W	QF-14-05	
WP-14-02	SPC-SPC-014	Tubing pressure and leak tests	P	W	-	-	QF-14-03	
WP-14-03	SPC-SPC-014	End-to-end calibration of custody transmitters PT-111, PT-121, TT-111 and TT-121	P	W	-	W	QF-14-01	
WP-14-05	SPC-SPC-014	SDV-141 and RO-141A installation and shutdown closure check; analyzer vent flows on lines 1130 to 1135 measured	P	W	-	-	QF-14-01	
HP-14-03	SPC-SPC-014	Calibration of PT-133A, PT-133B and PT-133C with as-found and as-left values, write protection and separate input card verification, before SIF validation	P	H	R	W	QF-14-02	

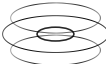
TORUS	· Owner INSPECTION AND TEST PLAN		Document No.	SPC-SPC-019				
			Revision / Date	A · September 29, 2026				
			Issue purpose	Issued for Review				
SPECIFICATIONS · INSPECTION AND TEST PLAN								
ID	Section	Activity	C	O	E	W	Record	
WP-14-04	SPC-SPC-014	Gas chromatograph and analyzer calibration and repeatability check	S	W	-	W	Vendor report	
HP-14-04	SPC-SPC-014	Loop checks complete, with all category A punch items closed, before commissioning of the system	P	H	R	-	QF-14-04	

Table 16: SPC-SPC-015, Cathodic Protection Installation and Testing

ID	Section	Activity	C	O	E	W	Record
HP-15-05	SPC-SPC-015	Water Resources Board registration of DW-101 obtained, or confirmed not required, before drilling (HOLD H-19)	P	H	R	-	Registration or Owner release letter
HP-15-01	SPC-SPC-015	CP materials, installer qualifications and thermite procedure approved	P	R	H	-	Submittals 15-01 to 15-03
WP-15-01	SPC-SPC-015	Thermite connections to pipe (first three per welder, then 10 %), including hammer test and coating	P	W	-	-	QF-15-01
WP-15-02	SPC-SPC-015	IJ-101 and IJ-102 insulation tests on receipt and after installation	P	W	-	W	QF-15-02
WP-15-03	SPC-SPC-015	Anode, header cable and test station installation before backfill	P	W	-	-	QF-15-03
HP-15-02	SPC-SPC-015	Native potential survey complete and accepted before energizing	P	R	H	-	QF-15-04
HP-15-03	SPC-SPC-015	Polarity verification at energizing	P	H	-	-	QF-15-05
WP-15-04	SPC-SPC-015	Interference test at the tap valve and trunkline	P	W	S	W	QF-15-06, submittal 15-07
HP-15-04	SPC-SPC-015	Commissioning survey accepted by the EOR against the criteria before turnover	P	R	H	R	Submittal 15-06

PHASE F. PRESSURE TESTING

Table 17: SPC-SPC-011, Hydrostatic Testing, Dewatering and Drying

ID	Section	Activity	C	O	E	W	Record
HP-11-01	SPC-SPC-011	Test procedure, test heads and water management plan approved	P	R	H	R	Approved procedure
HP-11-02	SPC-SPC-011	Pre-test checklist and test package complete, instruments calibrated, exclusion zones set (each section)	P	H	R	-	QF-11-01
HP-11-03	SPC-SPC-011	Test water sampling results acceptable before fill	P	H	-	-	QF-11-05
HP-11-04	SPC-SPC-011	Strength and leak tests of TS-01A and TS-01B, DWT at the high point, elevation-corrected pressures	P	H	W	W	QF-11-02, -03, -04
HP-11-05	SPC-SPC-011	Strength and leak test of TS-02, outlet lateral	P	H	W	W	QF-11-02, -03, -04
WP-11-01	SPC-SPC-011	Strength and leak tests of TS-03 to TS-05	P	W	-	-	QF-11-02
WP-11-02	SPC-SPC-011	Vendor shop tests of pre-tested units, including V-101 at 2,225 psig	S	W	R	W	Vendor certificate
HP-11-06	SPC-SPC-011	EOR acceptance of the test record before dewatering release (each section)	P	R	H	-	QF-11-02
WP-11-03	SPC-SPC-011	Test water discharge or haul-off	P	W	-	-	QF-11-05
HP-11-07	SPC-SPC-011	Drying acceptance, dewpoint and 12 hour soak	P	H	-	W	QF-11-06
HP-11-08	SPC-SPC-011	Closure weld NDE and documentation accepted, where a closure weld is approved	P	H	H	W	QF-11-08
WP-11-04	SPC-SPC-011	Nitrogen blanket checks until gas-in	P	S	-	-	QF-11-07

PHASE G. TIE-IN, GAS-IN, COMMISSIONING AND STARTUP

Table 18: SPC-SPC-012, Tie-in, Hot Tap Coordination and Purging

ID	Section	Activity	C	O	E	W	Record
HP-12-01	SPC-SPC-012	Tie-in and gas-in procedure approved, and the receiving pipeline operator's requirements confirmed in writing (HOLD H-01, H-04)	P	R	H	R	Approved procedure
HP-12-02	SPC-SPC-012	Excavation plan in the right-of-way approved; locates and potholing complete before mechanized excavation within 25 ft of the trunkline	P	H	-	H	12-S2, locate tickets
HP-12-03	SPC-SPC-012	Pre-tie-in meeting held and minuted	P	H	-	W	12-S6
HP-12-04	SPC-SPC-012	Terminal spool bolted to the tap valve flange, tap valve verified closed and holding	P	H	-	W	QF-12-03



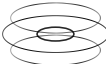
 TORUS		· Owner INSPECTION AND TEST PLAN		Document No.	SPC-SPC-019			
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ID	Section	Activity	C	O	E	W	Record	
WP-12-01	SPC-SPC-012	IJ-101 tie-in to the upstream lateral	P	W	-	-	QF-12-03	
HP-12-05	SPC-SPC-012	Air-to-nitrogen purge accepted, oxygen at or below 2 %	P	H	-	-	QF-12-01	
HP-12-06	SPC-SPC-012	Gas-in release: drying and blanket accepted, pre-commissioning complete, overpressure shutdown function validated, emergency shutdown tested, qualification records, part A of QF-12-01 signed	P	H	H	W	QF-12-01 A, SPC-SPC-018 release	
HP-12-09	SPC-SPC-012	Gas-in method confirmed: Method A nitrogen pre-pressurization reached and the temperature calculation for the day’s supply signed, or Method B supply at 900 psig or less and 60 °F or warmer verified	P	H	R	-	QF-12-01	
HP-12-07	SPC-SPC-012	Nitrogen-to-gas displacement accepted, and the leak check at each pressurization stage	P	H	-	-	QF-12-01, QF-12-02	
HP-12-08	SPC-SPC-012	Tap valve opening: part B of QF-12-01, pressure equalized, gas control authorization	P	H	-	H	QF-12-01 B, QF-12-04	
WP-12-02	SPC-SPC-012	Leak check of the tap valve flange at operating pressure	P	W	-	W	QF-12-02, QF-12-03	

Table 19: SPC-SPC-018, Pre-commissioning, Commissioning and Startup

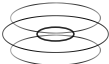
ID	Section	Activity	C	O	E	W	Record
HP-18-01	SPC-SPC-018	Mechanical completion per system	P	H	R	-	QF-18-01 MC certificate and checklists
HP-18-02	SPC-SPC-018	Ready for commissioning per system	P	H	R	-	QF-18-02 RFC certificate
WP-18-01	SPC-SPC-018	FAT of safety PLC, RTU, FQI-110, B-101 analyzers, BMS-150	S	W	W	W	Vendor FAT report
HP-18-03	SPC-SPC-018	Loop checks complete, including demarcation panel points	P	H	-	W	QF-18-03 loop sheets
WP-18-02	SPC-SPC-018	Valve stroke tests, SDV-102 full stroke 4 s or less and partial-stroke test	P	W	W	W	QF-18-04 stroke test record
HP-18-04	SPC-SPC-018	SAT of safety PLC, RTU, flow computer, analyzers, ultrasonic meters	P	H	R	W	QF-18-05 SAT records
HP-18-05	SPC-SPC-018	Cause-and-effect functional test	P	H	W	W	QF-18-06 test record
HP-18-06	SPC-SPC-018	SIS validation: SIF-01 OPSS SIL 2 (2oo3 at 1,225 psig on separate input cards, closes SDV-102 and SDV-103, PST demonstrated), SIF-05 BMS SIL 2, bypass tests	P	H	H	W	QF-18-07 SIS validation report
HP-18-07	SPC-SPC-018	Stage 3 functional safety assessment before gas is introduced	S	H	H	R	Assessment record
HP-18-08	SPC-SPC-018	PSSR prior-to-startup items closed	S	H	R	-	PSSR checklist
HP-18-09	SPC-SPC-018	RFSU certificate	P	H	H	H	RFSU certificate
HP-18-10	SPC-SPC-018	Gas-in and staged pressurization of the station	P	H	S	W	Gas-in record (SPC-SPC-012)
WP-18-03	SPC-SPC-018	H-101 BMS trips and light-off	P	W	-	-	Heater startup record
HP-18-11	SPC-SPC-018	Measurement commissioning and first series verification within 0.3 %	S	H	R	H	QF-18-08 measurement record
HP-18-12	SPC-SPC-018	First delivery into the trunkline	S	H	-	H	Operator release, delivery log
HP-18-13	SPC-SPC-018	72 hour performance test	P	H	R	W	QF-18-09 performance test report
HP-18-14	SPC-SPC-018	Provisional acceptance	P	H	H	-	PA certificate

PHASE H. RECORDS AND TURNOVER

Table 20: SPC-SPC-020, Construction Records and Turnover

ID	Section	Activity	C	O	E	W	Record
HP-20-01	SPC-SPC-020	Records management plan and MDR structure accepted before fabrication	P	H	R	-	Submittals 20-01, 20-02
HP-20-02	SPC-SPC-020	Material receiving: MTR verification against markings before issue to fabrication	P	H	-	-	QF-20-01 receiving and traceability register
WP-20-01	SPC-SPC-020	Heat-number transfer on cut pipe	P	W	-	-	QF-20-01
HP-20-03	SPC-SPC-020	Weld and NDE records complete and reconciled per test section before hydrotest	P	H	R	-	QF-20-02 weld log reconciliation
HP-20-04	SPC-SPC-020	As-built survey of buried pipe before backfill	P	H	-	R	QF-20-03 survey point record
HP-20-05	SPC-SPC-020	Test package records accepted (49 CFR 192.517 content)	P	H	H	R	QF-11-02 test record and package; QF-20-04 package review
HP-20-06	SPC-SPC-020	MAOP summary sheet reviewed by the EOR	P	R	H	R	QF-20-05 MAOP summary
HP-20-07	SPC-SPC-020	Final as-builts accepted	P	H	H	R	Submittal 20-09



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ID	Section	Activity	C	O	E	W	Record	
HP-20-08	SPC-SPC-020	Final turnover dossier accepted (release of pay item 01.05)	P	H	R	-	QF-20-06 completeness certificate	

SUMMARY BY PARTY

Table 21: Inspection Points by Party and Code

Party	Hold	Witness	Review	Surveillance	Perform
Contractor	0	0	0	8	184
Owner	109	63	16	5	0
EOR	28	5	52	5	0
Receiving pipeline operator	10	28	10	1	0