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TMC's Fulfilment of Information Criteria in the NOAA Application

Seven requirements of 15 CFR 971.214 tested against TMC USA's consolidated application and against industry norms

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1. Purpose and status

This note asks whether TMC USA's consolidated application to NOAA supplies the information that 15 CFR 971.214 requires before NOAA may certify an exploration licence and commercial recovery permit, and how that information compares with what a well-prepared applicant would supply for the same decision. It covers the seven requirements that bear on feasibility: qualification for the consolidated route, financial resources, technological capability, the commercial recovery plan, the resource assessment, processing methods and onshore facilities, and processing in the United States. Environmental information, vessels, ownership, antitrust and fees are outside its scope.

Each requirement is treated in three steps: what TMC has put on the public record, a critique of it, and a normative answer — the information a well-prepared applicant would supply, drawn from the norms that govern the same questions elsewhere. The record is the application as published by NOAA, read with the NORI-D pre-feasibility study (PFS) and the Initial Assessment (IA) that TMC filed with the SEC; where they differ, the application is taken first.[1] The resource assessment draws on Koinon's separate note on the NORI-D reserve.[2]

The public version of the application is redacted, notably its budgets; where a judgement turns on redacted material, the note says so. It is offered as a test of the record against stated norms, not as a finding about anyone's conduct.

2. Summary of findings

NOAA determined on 28 April 2026 that the application was in "full compliance". That determination is a completeness test: each required item is present, so processing may begin.[3] The test on the merits is certification under 971.214(e), which follows the comment period and requires NOAA to find in writing that the applicant possesses the scientific, technical and financial resources to pursue commercial recovery in an expeditious and diligent manner, and that its recovery plan meets the regulation. This note addresses that second test.

The application supplies something under every heading. In most, what it supplies sits a level below the norm for the same decision elsewhere: pre-feasibility where a production decision calls for feasibility, laboratory or pilot scale where it calls for full scale, prospective arrangements where it calls for signed ones.

Requirement	What the application supplies	What the norm asks for
1. Qualification for the consolidated route (d)(1)	Feasibility work stops at a pre-feasibility study for NORI-D, 39% of the area, and an Initial Assessment for TOML-F; none for A-B. Of nineteen agreements listed, only three intra-group data-sharing agreements are complete.	A feasibility study (costs ±15%, contingency ≤10%) for the ground mined first, and key counterparties under signed agreements or binding terms.
2. Financial resources (d)(2)	Budgets redacted. Funding case rests on equity raised to date, $262m of liquidity and a parent guarantee. No project finance committed; credit rating declared "not relevant".	Full budget; each funding tranche with its status; independent cost review; committed sponsor equity sized to pre-production costs.

[1] The application is TMC USA's consolidated application for an exploration licence and commercial recovery permit for TMC USA-A, as published by NOAA on 19 August 2026 (NOAA-NOS-2026-1751-0002; partly redacted). The PFS is AMC Consultants, "Technical Report Summary of Prefeasibility Study of NORI Area D", effective 4 August 2025 (TMC Form 10-Q Exhibit 96.1); the IA is AMC Consultants, "Technical Report Summary, Initial Assessment of TOML and NORI Properties", same date (Exhibit 96.2). Section and table references are to these documents.

[2] Koinon Consulting, The NORI-D Reserve: Four Findings on the Resource and Reserve Estimates, 16 October 2026. Section 8 of this note summarises its findings; the computations are set out there.

[3] NOAA's full-compliance determination was announced by TMC on 1 May 2026 and recorded in the Federal Register notice of 19 August 2026 (91 FR 53608). The regulation defines completeness as information "specifically identifiable with and fully responsive to" each requirement; it is not a finding on adequacy.

Requirement	What the application supplies	What the norm asks for
3. Technological capability (d)(3)	One integrated test in 2022 lifted 3,000 t, about 35 hours of operation. Production collector not finalised; performance “not determined”. No readiness level stated.	Readiness level per step, with evidence; technology readiness level (TRL) 7–8 before construction commitments; further integrated trial where the production design differs from the tested one.
4. Commercial recovery plan (d)(5)	Schedules 202.5 Mt over twenty years on a 51 Mt reserve exhausted in 2034, the seventh year of collection; the rest from unconverted resource, Inferred TOML-F and unsampled A-B. No manganese market analysis.	Life-of-mine plan on reserves; extensions shown as conditional on conversion; annual restatement and reconciliation; market study for each major product.
5. Resource assessment (d)(5)(v)	619 Mt reported for area A-A (363 Mt NORI-D, 256 Mt TOML-F); 347 of NORI-D’s 363 Mt (96%) classed Indicated in the 2025 estimate, on cores 7–10 km apart, with continuity fitted near the test site. AMC certifies the resource model and reserve geometry; the modifying factors are signed by TMC officers, not a third party.	Classification tied to continuity at sample spacing; published sampling and variogram data; independent review of modifying factors.
6. Processing methods and onshore facilities (d)(5)(vi), (d)(6)(iv)	Smelting piloted on 75 t and a 2,000 t trial; refining tested at lab scale only. Brownsville plant has no signed lease, licensor, EPC contract, feasibility study or committed finance; output scheduled from 2028.	Continuous pilot campaigns on representative feed for every stage; independent metallurgical review; costs at feasibility accuracy; credible permit-to-commissioning schedule.
7. Processing in the United States (d)(11)	States that no foreign processing is sought, yet keeps Japan and Indonesia as the fallback if US funding fails; the PFS economics rest on that route. No trigger, duration or tonnage given.	Either the 971.408 showing now, with conditions, duration and tonnage, or a US route sited, costed and financed so that no fallback is needed.

Table 1. The seven requirements in summary. Sections 4 to 10 set out the record, the assessment and the normative answer for each.

Three patterns run through the findings. First, the record stops short of the definition that a production decision ordinarily requires, in the mine, the machine and the plant alike. Second, the items that would allow NOAA to judge financial capacity are redacted from the public record, prospective or unsigned. Third, the applicant invokes SEC Regulation S-K subpart 1300 for its inputs and departs from it at the outputs: the schedule runs well beyond the reserve, and the economic case on record rests on a foreign processing route that the application says it does not seek.

3. The standard

3.1 What the consolidated procedure requires

TMC USA applied under 971.214, which governs consolidated applications and displaces the separate application rules in 971.200–210.[4] Paragraph (d) lists eleven items of content; seven bear on feasibility and are tested here. Each must contain information “sufficient to enable the Administrator to make the findings” required for certification and issuance. Subpart E of part 971 remains in force, so the resource-assessment, logical-mining-unit, conservation and diligence rules of 971.501–503 apply through the recovery plan. Appendix A sets out each requirement, its key text and the data it implies.

3.2 Why external norms apply

The regulation says what must be shown but rarely how well; its open terms take their content from the norms that govern the same questions elsewhere, and three reasons make those norms apt here. The regulation imports one of them: 971.214(d)(2) requires the applicant’s latest Form 10-K, so TMC’s disclosures under S-K 1300 are part of the record NOAA must weigh.[5] The applicant relies on its S-K 1300

[4] 15 CFR 971.214(a). The section was added by the final rule of 21 January 2026 (91 FR 2642), which allows an applicant to seek an exploration licence and a commercial recovery permit in one application.

[5] 15 CFR 971.214(d)(2) requires, for publicly held companies, “the most recent annual report and Form 10-K filed with the Securities and Exchange Commission”. TMC’s technical report summaries under S-K 1300 are filed as exhibits to its periodic reports.

reports throughout, and so invites the standard they belong to. And the applicant names the federal lenders whose standards it expects to meet — the Development Finance Corporation, the Export-Import Bank and others — as prospective sources of finance.[6] The norms used below are S-K 1300 (17 CFR 229.1300–1305), DOE's loan-guarantee rules (10 CFR 609) as the nearest published statement of US public-lender diligence, technology readiness practice as reviewed by GAO, and resource-reporting guidance (CIM 2019; JORC 2012). Peer seabed regimes are comparators, not authorities.

4. Qualification for the consolidated route — 971.214(d)(1)

> *"A statement by the applicant demonstrating that it possesses the scientific, technical, and financial resources to pursue commercial recovery activities in an expeditious and diligent manner, and detailed support for this statement."*

4.1 What the application supplies

TMC USA claims qualification through its affiliates' thirteen years of exploration, TMC's staff and its partners, chiefly Allseas (s.2.4). The feasibility evaluation the rule contemplates under (d)(1)(i)(F) exists at two levels: a PFS covering NORI-D, about 39% of the 65,187 km² application area, and an IA covering TOML-F. The A-B block has no study and no samples. The PFS reserve, collector, cost and economic inputs are signed by TMC officers acting as Qualified Persons.

Of the nineteen agreements listed in Table 8, only three are complete, and all three are data-sharing agreements between TMC affiliates. The offshore operations partner, engineering provider, processing technology licensor, independent cost consultant, onshore feasibility consultant, joint-venture partner, EPC contractor, transport providers, landlord and port operator are all "not yet finalized".[7] Most were targeted for dates in 2026 that have now passed; the record does not show whether they were signed. The arrangement with PAMCO is a memorandum of understanding for a feasibility study of toll processing at 1.3 Mtpa, supported by a 2,000 t smelting trial (s.4.8.7.1).

4.2 Assessment

A pre-feasibility study is not ordinarily regarded in mining practice as sufficient to support a production decision; that is the function of a feasibility study. The consolidated route was created for applicants with exploration-phase data sufficient to move straight to recovery, yet for three fifths of the area TMC's own studies are at initial-assessment level or absent. The use of employee Qualified Persons is lawful under S-K 1300 but an outlier in industry practice, especially for a project using untested technologies. It would not be compliant, for example, under Canada's NI 43-101 for a first-time reserve. And the "detailed support" the rule asks for is, for the counterparties on which recovery depends, a list of roles to be filled.

4.3 The normative answer

An applicant ready for a production permit would present a feasibility study for the ground to be mined first. S-K 1300 defines this as a comprehensive study of the selected development option, with capital and operating costs to about ±15% accuracy and contingency of no more than 10%; a PFS allows ±25% and 15%.[8] Ground to be developed later would carry at least a PFS, and any initial assessment would be labelled as unable to support reserves. The counterparties on which recovery depends — offshore operator, processor or toll smelter, site landlord — would be under signed agreements or binding heads of terms with

[6] Application s.3.1.1 and s.7.4.3, citing Executive Order 14285 of 24 April 2025.

[7] Application Table 8 lists nineteen agreements. The three complete are data-sharing agreements with DeepGreen Engineering, Nauru Ocean Resources and Tonga Offshore Minerals, all TMC affiliates. Target dates for the remainder run from Q1-26 to Q3-27.

[8] 17 CFR 229.1302, Table 1 to paragraph (d), and 229.1302(e)(9). An initial assessment, if it includes costs, is held to about ±50% and contingency of no more than 25%.

stated conditions. The ISA's draft exploitation regime asks for a Mining Workplan and a Financing Plan with the application, and a feasibility study delivered at least twelve months before production.[9]

5. Financial resources — 971.214(d)(2)

> *"Information sufficient to demonstrate that the applicant is capable of committing or raising sufficient resources to cover the estimated costs of the exploration program … and the commercial recovery program …"*

5.1 What the application supplies

The cost estimates the rule requires are present but redacted in the public version: both the ten-year exploration budget (Table 10) and pre-production costs (Table 11). Pre-production costs cover only the first 3 Mtpa mining system; later vessels are to be financed by contractors and recovered through operating costs (s.3.2.2).

The funding case rests on TMC's record and standing: $686.3m of equity raised since inception, of which $85.8m was stock paid to Allseas; status as a well-known seasoned issuer; a market capitalisation above $3.4bn on 21 January 2026; and $261.8m of liquidity on 13 November 2025, made up of $120.9m cash, a $44.0m unsecured facility from two directors and $96.9m of in-the-money warrants.[10] A parent guarantee is at Appendix 2. No project-level debt or equity is committed. For the onshore plant TMC assumes about 30% equity, including up to about $750m from TMC, and 70% debt and government support, and states that no party is obliged to provide financing.[11] Credit and bond ratings are declared "not relevant" (s.3.4).

5.2 Assessment

The information goes to TMC's capacity to raise money in general, not to its capacity to fund the programme in the plan. With the budget redacted, a reader cannot compare sources with uses, and the stated liquidity is small beside the onshore equity alone. Cost estimates are TMC's own; the independent cost consultant listed in Table 8 is unappointed. TMC's cash has since fallen with continuing losses.[12] The application does not discuss how revenue would be exposed to prices or offtake terms under a unilateralist route to project execution supported by the US Government. On the application's own funding structure, Koinon's companion note on unit economics puts the debt-and-incentives tranche at about US$9bn and finds the operating surplus short of servicing it in 73% of iterations, with an expected loss to lenders of US$4.5bn, about half the debt.[13]

5.3 The normative answer

Lender practice, of which DOE's loan-guarantee rules are the nearest published US example, asks for four things before money is committed: technical due diligence by independent consultants paid for by the applicant; an audited financial model; a significant equity investment by the sponsor, without which an application is denied; and, where DOE requires it, a credit assessment by a recognised rating agency.[14] A normative answer under (d)(2) would show the full budget, the source of each tranche with its status (committed, conditional or prospective), an independent cost review, and equity commitments sized to the pre-production budget — not market capitalisation and a fund-raising record.

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[9] ISA Legal and Technical Commission, guidance on the preparation of applications for plans of work for exploitation, ISBA/27/C/3 (2022), Annex I checklist and Annex II flow chart. The draft regulations have since been revised (ISBA/31/C/CRP.1/Rev.3, June 2026); the comparison here is to the structure, not to specific wording.

[10] Application ss.3.1, 3.1.2. The $85.8m was paid in stock to Allseas for completing the 2022 test-mining programme, so is not cash raised.

[11] Application s.7.4.3. The same section names possible contributions from the Department of War, the International Development Finance Corporation, the Export-Import Bank and the Trade and Development Agency.

[12] TMC Form 10-Q for the period ended 30 June 2026: cash and cash equivalents $98.7m; net loss $80.7m for the six months. Koinon has not checked whether TMC's current filings carry a going-concern qualification.

[13] Koinon Consulting, Value, Cost and Capital: NORI-D by the Wet Tonne, 16 October 2026, Finding 5. Debt and incentives are 70% of onshore capital after overrun and interest during construction, serviced at 7% over 15 years; 10,000 iterations, compared draw by draw.

[14] 10 CFR 609.11(a) (applicant bears the cost of DOE's independent consultants), 609.2 (transaction costs include developing and auditing a financial model), 609.8(b)(17) and 609.5(b)(5) (significant equity), 609.12 (credit assessment), 609.7(b)(4) (guaranteed debt capped at 80% of project costs).

6. Technological capability — 971.214(d)(3)

> *"An analysis of the performance of experimental systems, sub-systems, or analogous machinery; the rationale for extrapolating from test results to commercial mining; anticipated system reliability …"*

6.1 What the application supplies

The offshore evidence is the 2022 Allseas test, in which the system collected 4,500 t and lifted 3,000 t at 86.4 t/h, supplemented by scale models and drive tests (s.2.3).[15] The application describes the selected system as at "an advanced pre-commercial level of readiness" (s.6.5.1.1), without assigning it a technology readiness level; it does assign TRL 2–3 to alternative riser concepts (s.4.2.5.6). The two production collectors will at first run duty-standby, one working at a time, with parallel running expected after six to twelve months (s.4.2.4). Reliability is addressed through assumed annual operating hours (Table 30).

6.2 Assessment

The 3,000 t lifted represents about 35 hours of lifting and a tenth of one percent of one vessel's 3 Mtpa nameplate. The scale-up rationale rests on Allseas simulation and a nozzle pick-up of 84.3% described as a design specification. The PFS reserve Qualified Person records that the production collector design has not been finalised and that its productivity, recovery, speed and availability have not been determined.[16] Post-mining box cores show recoveries from 8% to 96%.[17] Reliability is assumed, not measured.

6.3 The normative answer

The usual yardstick is the technology readiness level. DOE's guidance allows TRL 6, a prototype demonstrated in a relevant environment, at approval of the cost baseline and start of construction; GAO recommended a higher bar of at least TRL 7, a full system prototype in the operational environment, and if possible TRL 8, before committing to construction.[18] A normative answer would assign a readiness level to each step of the mining chain with the evidence for it; report the 2022 test against the production design, including run time, availability and recovery measured over swept area; and, where the production system differs from the one tested, commit to a further integrated trial before commercial operation. DOE's loan rules make the same point from the lender's side: a project for demonstration, research or development is ineligible (10 CFR 609.5(b)(4)).

7. Commercial recovery plan — 971.214(d)(5)

> *"Description of the applicant's projected commercial recovery activities for the twenty-year period … including sufficient information for the Administrator to make the necessary determinations …"*

7.1 What the application supplies

Table 44 schedules 202.5 Mt over 2028–47 from up to four production vessels. Attributed to the ground it must come from, about 3 Mt comes from the first two mapped lanes, 48 Mt from the rest of the reserve, about 113 Mt from NORI-D resource not converted to reserve, and about 39 Mt from TOML-F and A-B.[19] The logical-mining-unit case generalises the 57% conversion achieved on the flattest ground to 46% across the block, and closes the remaining gap from A-B, where no resource estimate exists.[20]

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[15] Application s.2.1.5. At 86.4 t/h, 3,000 t represents about 35 hours of lifting.

[16] PFS s.12.7, as quoted in the NORI-D Reserve note, section 5.1.

[17] Application Table 25, as reported in the NORI-D Reserve note, Table 7; low values are attributed to umbilical control faults to be rectified in the final design.

[18] GAO, Department of Energy: Consistent Application of Requirements Needed to Improve Project Management, GAO-07-336 (2007). TRL definitions follow the scale used by DOE and NASA: TRL 6, system or subsystem prototype demonstrated in a relevant environment; TRL 7, system prototype demonstrated in an operational environment; TRL 8, actual system completed and qualified through test and demonstration; TRL 9, actual system proven through successful operations.

[19] Attribution of application Table 44 to the ground it must come from, from the NORI-D Reserve note, Table 8. The split of the last 39 Mt between TOML-F and A-B is Koinon's; the application gives none.

[20] Application s.6.2.6. The section concedes that A-A "would nearly be (but not quite) sufficient" to support twenty years in its downside case.

On conservation (s.6.2.7), the plan proposes long runs with no selective mining, a sequence from the Initial Production Area to the Initial Mining Area and then the rest of NORI-D and TOML-F, and recovery of manganese as a silicate for silico-manganese producers.

7.2 Assessment

The 51 Mt reserve covers about a quarter of the plan and is exhausted in 2034, the seventh year of collection; the remaining thirteen years draw on ground with no reserve status, a quarter of it outside the PFS area. Manganese marketability rests on a value-in-use study and the statement that the product fits an "existing market".[21] There is no analysis of whether that market can absorb twenty years of output, and the plan does not say what becomes of the manganese if the silicate cannot be sold — the case in which 971.502 restricts dispersal in tailings.

7.3 The normative answer

Under S-K 1300 a life-of-mine plan supporting economic viability must be technically achievable and economically viable and must exclude Inferred resources; material outside the reserve may appear only in an initial assessment, which cannot be used as the basis for reserves.[22] A normative plan would schedule the reserve, show any extension as conditional on future conversion, and state the evidence and timetable for that conversion. Terrestrial practice adds annual reserve restatement and reconciliation of mined against modelled tonnage. For manganese, a product carrying a large share of revenue would be backed by a market study: demand, competing supply, price basis, and named offtakers for a meaningful share of output.

8. Resource assessment — 971.214(d)(5)(v)

> *"A resource assessment of the area or areas proposed for commercial recovery … The resource assessment may be preliminary at the time of application …"*

8.1 What the application supplies

The application reports 619 Mt in A-A: 363 Mt in NORI-D (5 Mt Measured, 347 Mt Indicated, 11 Mt Inferred) and 256 Mt in TOML-F (12 Mt Indicated, 244 Mt Inferred), with a 51 Mt Probable reserve in NORI-D only (s.6.2). A-B is assigned "200 Mt of exploration potential" by assuming 10 kg/m² over 20,000 km²; it is not a resource.

8.2 Assessment

Koinon's note on the NORI-D reserve reaches four findings that bear directly on this requirement. The second 2019 cruise, which supplies about two fifths of the NORI-D resource, placed 70% of its cores more than 100 m off the planned lattice, re-sited away from the steep hardground on which fifteen landings of the first cruise had failed; those failures are not in the data. The Indicated classification rests on a variogram whose short-range structure comes almost entirely from core pairs around the 2022 test site; on the usual spacing-versus-range convention only about 4 Mt would be Indicated, and on the alternatives the note judges reasonable 4–62 Mt, against 347 Mt declared. The reserve applies modifying factors signed by TMC officers, several resting on Allseas simulations and assumptions, at zero cut-off, with fine mapping over about a tenth of the reserve area. The rule's allowance that the assessment "may be preliminary" does not extend to presenting it at a confidence the data do not carry.

8.3 The normative answer

S-K 1300 requires Indicated resources to rest on adequate geological evidence and sampling, admits Probable reserves only from Indicated or Measured resource, and bars conversion of Inferred resource without new evidence; industry guidance ties classification to continuity demonstrated at the sample

[21] Application s.4.8.5.2. SINTEF's study found a cost saving of 7–17% to silico-manganese smelters and a 24% reduction in CO_2, relative to existing feedstocks.

[22] 17 CFR 229.1302(e)(3) and (e)(6); 229.1300 (definition of initial assessment).

spacing.[23] A normative assessment would publish the sampling plans and drop logs, the variogram pair data, the classification criteria with their sensitivity, and a reconciliation of test-mining tonnage against swept area. It would have its mining and cost modifying factors reviewed by a Qualified Person independent of the applicant, and apply a cut-off at the scale at which the collector works.

9. Processing methods and onshore facilities — 971.214(d)(5)(vi) and (d)(6)(iv)

> *"Onshore information including the location and operation of nodule processing facilities …"*

9.1 What the application supplies

The flowsheet (s.4.8.3) is rotary kiln–electric furnace smelting to a nickel-copper-cobalt alloy and a manganese silicate, Peirce-Smith converting to matte, and atmospheric and pressure leaching with solvent extraction to nickel and cobalt sulfates and copper cathode. Testing comprises bench work, pilot calcining, smelting and converting on 75 t of nodules,[24] and a 2,000 t smelting trial at PAMCO's Hachinohe plant in 2024–25. The refinery stage has been tested at laboratory scale only. Plant operating factors of 85% and 91% are estimates.[25]

TMC proposes to build the facility at the Port of Brownsville, Texas: 3 Mtpa in a first stage, within a 12 Mtpa industrial park (ss.6.4.2, 7.4). The 735-acre lease is under negotiation; the technology licence, onshore feasibility study, EPC contract and joint-venture partner were scheduled for 2026–27 (Table 8). The applicant schedules processing from 2028 (Table 44).

9.2 Assessment

The pyrometallurgical front end is supported by pilot work and one campaign in a commercial furnace; the hydrometallurgical refinery, which produces the battery-grade products, is not. The plant capital cost is not in the public text. Koinon's companion note estimates the smelter at US$2.45–3.65bn and, with the two refineries the PFS costs, the integrated plant at about US$6.9–8.1bn before overruns.[26] A greenfield smelter and refinery at a site without a signed lease, licensor or contractor, and with its feasibility study still to be commissioned, is scheduled to receive nodules in 2028, leaving no evident time for permitting, design and construction.

9.3 The normative answer

For a feasibility study S-K 1300 expects completed detailed bench tests and a pilot plant test where risk requires it.[27] A first application of a flowsheet to a new feed is the case in which risk requires piloting, and the requirement applies to each stage, refining included. A normative answer would show continuous pilot campaigns on representative feed for smelting and refining, with mass balances and recoveries; an independent metallurgical review; plant capital and operating costs at feasibility accuracy; and a schedule from permitting to commissioning, with land, technology licence and EPC arrangements in place or under signed terms.

[23] 17 CFR 229.1300 (definitions of indicated mineral resource and probable mineral reserve); 229.1302(e)(15). CIM, Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (2019); JORC Code (2012), Table 1.

[24] Application Table 32: pilot calcining (FLS, December 2020), pilot smelting (XPS, February 2022), sulfidation and converting (XPS, December 2021).

[25] Application ss.4.8.1, 4.8.6. The refinery stage was developed with Hatch.

[26] Koinon Consulting, Value, Cost and Capital: NORI-D by the Wet Tonne, 16 October 2026, s.6.1 and Appendix C: smelter scaled from the 2021 Initial Assessment to 12 Mt a year wet at 28% moisture, in real 2025 dollars; refineries US$4,426m (PFS Table 18.2).

[27] 17 CFR 229.1302(e)(10)(iii). For a pre-feasibility study the requirement is detailed bench laboratory tests (Table 1 to paragraph (d)).

10. Processing in the United States — 971.214(d)(11)

> *"… the processing of nodules recovered pursuant to a permit shall be conducted within the United States … The application shall contain the information outlined in § 971.408 if applicable."*

10.1 What the application supplies

Section 12 states that TMC USA plans to process in the United States and does not seek approval to process outside it, so that the justification and assurances of 971.408 do not apply.[28] Section 7.4.4 nonetheless sets out an "alternative onshore processing strategy": if US Government funding is not secured, nodules would go to PAMCO in Japan, up to 1.3 Mtpa for five years, and to Indonesia, with matte to be refined at the proposed Brownsville plant from year 6. Section 12.2 offers assurances that products processed abroad would be returned to the United States "to the extent there is domestic capacity" to receive them.

10.2 Assessment

The foreign route is not a remote contingency. It is the processing case on which the PFS demonstrated economic viability, while the Brownsville route, now the principal path, has no study at that level on the public record.[29] No trigger, duration or tonnage for a switch is given, and TMC undertakes only to consult NOAA if the need arises.

10.3 The normative answer

Here the regulation is itself the norm. Before issuing a permit that allows processing abroad, NOAA must find that processing the quantity concerned outside the United States "is necessary for the economic viability" of the recovery activities, and that the permittee has given satisfactory assurances of return.[30] An application whose own economic case rests on foreign processing would either make that showing now, stating the conditions, duration and tonnage of the foreign stage, or present US processing on a basis — sited, costed and financed — that makes the fallback unnecessary.

11. Documents NOAA could require of the applicant

- The unredacted exploration and pre-production budgets, with a schedule of sources and uses and the status of each source (section 5).
- An independent review of capital and operating costs and of the mining, cost and economic modifying factors, by a party not employed by the applicant or its contractors (sections 4, 5 and 8).
- The status of each agreement in application Table 8 targeted for 2026, with executed copies or terms where signed (section 4).
- A technology readiness assessment for each step of the mining chain, and the 2022 test-mining record of run time, availability and recovery over swept area (section 6).
- A reserve-based schedule for the permit term, with the conditions and evidence on which extension beyond the reserve would depend (section 7).
- A market study for manganese silicate, and the disposition of manganese if it is not sold (section 7).
- The sampling plans, drop logs and variogram data underlying the resource classification (section 8; detailed in the NORI-D Reserve note).
- Pilot results for the refinery stage, the plant capital cost estimate, and a permitting and construction schedule for Brownsville (section 9).

[28] Application s.12.1.

[29] Application s.7.4.4. The PFS processing case sends nodules to PAMCO's Hachinohe plant (1.3 Mtpa, years 1–5) and to Indonesia for the excess, with 50% of matte refined at Brownsville from year 6 and 100% from year 10.

[30] 15 CFR 971.408(a). The finding is made after the opportunity for an agency hearing under 971.212(b).

- Either a 971.408 showing for the foreign processing route, or the economic case for the US route at the level of the PFS (section 10).

Appendix A. The requirements and the data they imply

The seven requirements of 15 CFR 971.214 tested in this note, with the key text of each, the data it implies, and the external norm used to give its open terms content.

Citation	Summary	Key text	Data implied	External norm
(d)(1)	Qualification for the consolidated route	"possesses the scientific, technical, and financial resources to pursue commercial recovery activities in an expeditious and diligent manner"	Exploration record; feasibility evaluation; partner agreements	S-K 1300 study levels; cost-estimate accuracy classes
(d)(2)	Financial resources	"capable of committing or raising sufficient resources to cover the estimated costs"	Cost estimates; annual expenditure schedule; funding sources; 10-K; credit ratings	Lender diligence (10 CFR 609): independent review, audited model, committed equity
(d)(3)	Technological capability	"The rationale for extrapolating from test results to commercial mining"	Methods per step; pilot test data; scale-up rationale; reliability	Technology readiness levels (DOE, GAO)
(d)(5)	Commercial recovery plan, 20 years	"sufficient information for the Administrator to make the necessary determinations"	Production schedule; areas and sequence; waste disposal; manganese handling	S-K 1300 life-of-mine plan on reserves; ISA plan of work
(d)(5)(v)	Resource assessment	"may be preliminary at the time of application"	Tonnage and grade by confidence class; mineable area; link to 20-year production	S-K 1300 classification; CIM 2019; JORC 2012 Table 1
(d)(5)(vi), (d)(6)(iv)	Recovery and processing methods; onshore facilities	"location and operation of nodule processing facilities"	Flowsheet; plant site, capacity, start date; test results	S-K 1300 metallurgical testing; TRLs
(d)(11)	Processing in the United States	"shall be conducted within the United States"	Location of each processing stage; justification for any foreign stage	15 CFR 971.408 itself

Table A1. Citations are to paragraphs of 15 CFR 971.214.

Appendix B. Sources and about this note

TMC USA LLC, Consolidated Application for an Exploration License and Commercial Recovery Permit, TMC USA-A, as published by NOAA 19 August 2026, NOAA-NOS-2026-1751-0002.

AMC Consultants Pty Ltd, Technical Report Summary of Prefeasibility Study of NORI Area D, effective 4 August 2025 (TMC Form 10-Q Exhibit 96.1); Technical Report Summary, Initial Assessment of TOML and NORI Properties, same date (Exhibit 96.2).

15 CFR Parts 970 and 971, as amended by NOAA, Deep Seabed Mining: Revisions to Regulations for Exploration License and Commercial Recovery Permit Applications, 91 FR 2642, 21 January 2026.

17 CFR 229.1300–1305 (SEC Regulation S-K, subpart 1300: Disclosure by Registrants Engaged in Mining Operations).

10 CFR Part 609 (DOE Loan Guarantees for Projects that Employ Innovative Technologies).

GAO, Department of Energy: Consistent Application of Requirements Needed to Improve Project Management, GAO-07-336, 2007.

CIM, Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines, 2019; JORC Code, 2012 edition.

ISA Legal and Technical Commission, guidance on applications for plans of work for exploitation, ISBA/27/C/3, 2022; draft exploitation regulations, ISBA/31/C/CRP.1/Rev.3, June 2026.

TMC the metals company Inc., Form 10-Q for the period ended 30 June 2026.

Koinon Consulting, The NORI-D Reserve: Four Findings on the Resource and Reserve Estimates, 16 October 2026.

Koinon Consulting, Value, Cost and Capital: NORI-D by the Wet Tonne, 16 October 2026.

About this note. Koinon Consulting has advised more than fifteen governments on mining contracts and fiscal terms. It has no relationship with any seabed minerals contractor and holds no interest in any seabed minerals project. This note was prepared for the Natural Resources Defense Council. Koinon's prior work on deep-sea mining economics, on which it draws, was carried out with the Oceano Azul Foundation, Oceans North, the Deep Sea Conservation Coalition and IUCN, each of which publicly supports a moratorium. We state this plainly because readers are entitled to weigh it. The test we invite is whether the documents say what we report them as saying.