Territories of Oil: The Trans-Arabian Pipeline

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In a paper delivered to the Royal Geographical Society in 1934, Baron John Cadman, chairman of the Anglo-Persian Oil Company and the Iraq Petroleum Company, addressed the influence of petroleum on the geography of the Middle East. It was *infrastructure*, he noted, that was particularly necessary for the exploitation of oil; light railways, telephone and telegraph lines, and pumping stations and pipes for water supply were essential to the uninterrupted flow of petroleum.[1] It was an obvious assertion. The same year marked the completion of a 12-inch-diameter export crude pipeline that connected the Kirkuk oil fields, located in the former Ottoman *vilayet* of Mosul in northern Iraq, to the Mediterranean terminal ports of Tripoli (Lebanon) and Haifa (Palestine). So significant were these pipelines to the new economy in the land of the Tigris and Euphrates that they were referred to as the country's "third river."[2]

Yet the third river was only the beginning of the global trade of petroleum across the Middle East. In the aftermath of World War II, a few years after large oil reserves were discovered by American companies in Saudi Arabia, the Trans-Arabian Pipeline (Tapline) was constructed to expand the export capacity of the Saudi concession by carrying crude from wells in the Eastern Province across Jordan and Syria to a Mediterranean port in Lebanon. The Trans-Arabian Pipeline Company was chartered in 1945 by the four American oil companies that held shares in the Arabian American Oil Company (Aramco) for the sole function of transporting, at cost, part of the crude produced by the sister company. When completed in 1950, the 1,214 kilometer (754 mile) conduit, with a diameter of 30 inches, was the world's largest oil pipeline system. Conceived to avoid the round-trip tanker voyage around the Arabian Peninsula, as well as the Suez Canal toll, the pipeline was referred to as a "shortcut in steel" and celebrated as an "energy highway." The company's publications featured photographs of the infrastructure as a free-floating pipe that merely overlaid the "far and empty" land and vanished into the horizon.[3] This image of a "modern trade route of steel" spoke of the infrastructural desire to inscribe a space of oil circulation, or to borrow Manuel Castells's term, a *space of flows*, across the Middle East.

Coined by Castells to describe the accelerating conditions of mobility in the global economy, the concept of a "space of flows" captures this intensified

Axonometric drawing of the Trans-Arabian Pipeline, Rania Ghosn, 2014.

exchange of resources, money, information, images, and finance.[4] The growth of oil into the largest item in international trade in terms of both value and weight was only made possible by the infrastructure that delivered it from its point of extraction to world markets. Geography, then—or, more accurately, the overcoming of distance—matters greatly. Distance in this respect is not measured in absolute terms but rather as *friction of distance*, quantified economically as the combined effect of the time and costs imposed by transportation. Given that crude is not worth much at the wellhead, the value of oil requires that it be moved in an efficient and timely manner. Such time-space compression involves a multitude of ways of shrinking distance while accelerating velocity. Geographical theory has examined the extent to which it is possible to overcome the friction of distance by improvements and accelerations in infrastructure within the global space of flows. David Harvey, for instance, argues that the development of communications and transport technologies mitigates the difficulties of capital accumulation by expanding markets and annihilating spatial barriers to profit realization.[5]

The concept of a space of flows remains insufficient, however, for theorizing the geographical relations that underpin the system of oil. It borrows from developments in biological sciences during the eighteenth and nineteenth century, notably William Harvey's discovery of blood circulation, to conceptualize the urban process as "flows" of resources through the "arteries and veins" of the geography.[6] Reductive metabolic analogies naturalize the politics of circulation and accumulation and cast circulatory systems as the world's veins and arteries that need to be freed from all possible sources of blockage.[7] The flow has no identifiable agency. It eclipses the territorial fixity and silences the negotiations, contradictions, conflicts, and interruptions in the biography of the infrastructure. Favoring a situation of "moving along," these analogies dismiss friction and violence as the necessary corollaries of circulation. The space of flows is also often used to celebrate the "death of distance" or "end of geography," but distance and geography are hardly immaterial where oil (and any number of other things in circulation) are concerned.

Why does it matter whether geography is abstracted? The erasure of the geographic abstracts technological systems—their materialities, dimensions, and territorialities. It removes from representation the territorial transformations along the conduit, which the inscription of the infrastructure produces, and overlooks the politics of consensus or dissensus necessary to distribute resources.[8] Rather than killing distance and dismissing geography, could we imagine and qualify the spaces of friction within such infrastructural systems? The paramount significance of crude transport within the oil regime could be conceptualized better through the idea of friction within geography. In *Friction: An Ethnography of Global Connection*, Anna Tsing writes that globalization can

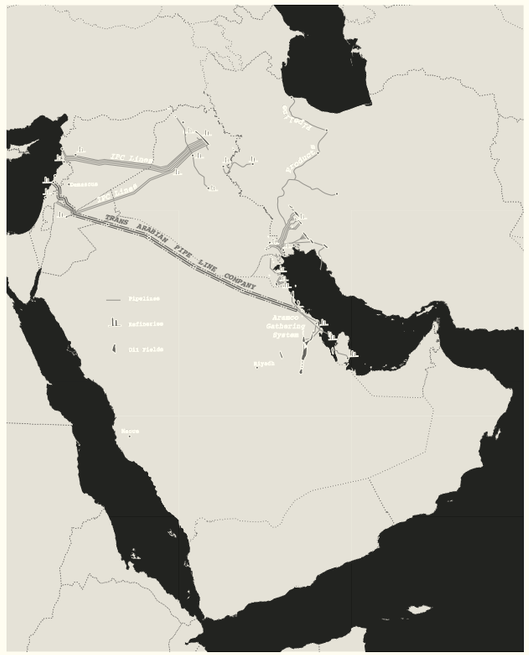
only be enacted in the sticky materiality of practical encounters, through what she calls "the awkward, unequal, unstable, and creative qualities of interconnection across difference."[9] Tsing suggests that if we imagine the flow as a creek, we would notice not only what the flows are but also the channels that make that movement possible (i.e., the political and social processes that enable or restrict flows). From this perspective, geography is understood as a constitutive dimension of global flows, a tool of government, and a stake of contestation in itself. Space is thus reordered by resource economies rather than eroded by metabolic flows.

Thus, we can reframe the issue of the Arab City through geographies of the Trans-Arabian Pipeline by joining geographical theory and representation to more familiar forms of historical scholarship on energy infrastructure.[10] Three friction-vignettes along the conduit reveal the flows and friction of this carbon commodity: these narratives take place in the water troughs, along the Tapline Road, and in the Sidon Terminal buildings. In attending to these places in time, I heed Timothy Mitchell's call to "closely follow the oil," which he puts forward in his greatly influential work on oil techno-politics in the Middle East. Closely following the oil means "tracing the connections that were made between pipelines and pumping stations, refineries and shipping routes, road systems and automobile cultures, dollar flows and economic knowledge, weapons experts and militarism"—all of which do not respect the boundaries between the material and the ideal, the political and the cultural, the natural and the social.[11] In this framework, one could think of the transnational oil system along the lines of as what Andrew Barry calls a "technical zone," a set of coordinated but widely dispersed regulations, calculative arrangements, infrastructures, and technical procedures that render certain objects or flows governable.[12]

With respect to the Tapline corporation and its pipeline project, the inscription of the flow required exploration trips and mappings of alternate routes, international relations and foreign diplomacy relations, private financing, conventions, procurements of rights-of-way, settling of transit fees, and engineering drawings. The construction of such a large engineering project involved resolving labor availability, training, and expertise, as well as conditions of capital and technology. It meant deciding on the movement of local populations, on procurement of pipes and machinery, on whom to employ to construct and operate the pipeline, and how to secure it. Often operating in regions isolated from central power and unconnected to national and regional networks, the transport operation had to "develop" the frontier by deploying roads, ancillary services, and security posts. Simultaneously, the pipeline was built in public relations, in glossy brochures, colorful photos of communities and landscapes, and promises about positive impacts on people along the route. In its multiple dimensions, the fixation of the circulatory system in space produced a

territory—simultaneously epistemological and material—through which international oil companies, transit and petro-states, and populations negotiated their political rationalities.

Four maps illustrate the zones at stake in Tapline's operation. The first represents the Middle East as a space of flows, a continuous background in which state boundaries recede in favor of bold pipelines. The map highlights the desire for a continuous zone of operation in which oil flows *in spite* of boundaries. However, and as the second map suggests, the continuity of operation did not imply that Tapline would annihilate political borders, for the kingdom's northern boundary corresponded with that of the Aramco concession. Tapline was a vertically integrated operation, in which the production and transport sectors operated as sister-companies; the flow of oil in the pipeline therefore depended primarily on the perpetuation of the Aramco concession and the reinforcement of Saudi territoriality. For both the concessionary company and the sovereign state, land—or, more precisely, the land's underground resources—was the new source of value, one that required an enduring order on the surface to secure the subsurface interest.

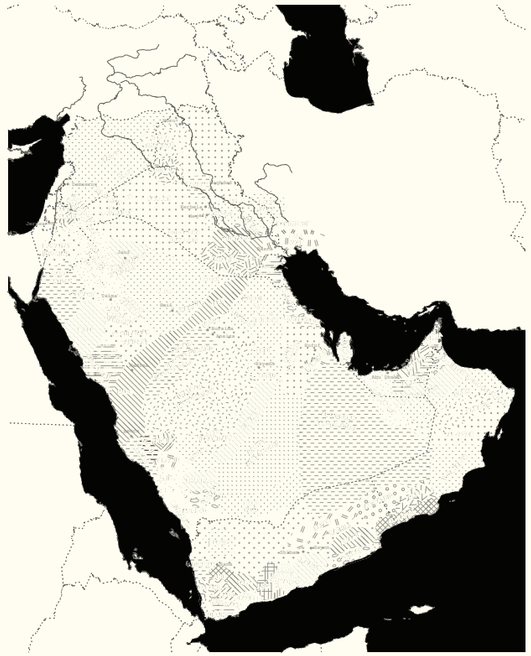


Map illustrating the Middle East as a zone of oil flows crisscrossed by pipelines.

Map illustrating the zones of control by concessionary companies in Saudi Arabia.

For Saudi Arabia, the northern boundary represented a double security challenge. The kingdom was keen to guard its northern region against possible external threats from Iraq and Jordan while also reinforcing its rule over the range of Bedouin tribes, particularly those who had seasonally moved back and forth into Iraq in search of water, as shown in the third map. Arabian political boundaries previously had been defined in relation to the territorialities of the tribes, who in turn defined their ranges in relation to access to water. One of the tasks of the Arabian Research Division (AAD), Aramco's in-house research and analysis organization, was to survey the tribes, their geographies, and their water access. The fourth map speaks of such efforts to depict the tribal zones of influence. It roughly represents the tribal ranges, or *diras*, for the principal tribes of Saudi Arabia. A *dira* was not a strictly bounded and exclusively occupied territory but rather a loosely hemmed area of clan control, based around claims to permanent wells. The clear demarcation of the northern boundary was to replace a shifting and negotiated territorial order across northern Arabia. Collectively, the four maps visualize a project of rule with the overlaid territorial claims of the concession, the kingdom, the *diras*, and the secure border zone.

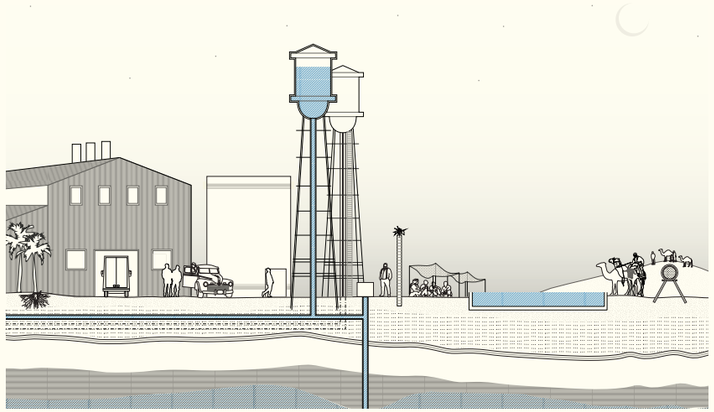
Map illustrating the geography of Saudi Arabian security.



Map illustrating tribal composition of the region.

Tapline thus delineated control in the northern Saudi territory—it inscribed boundaries, settled populations, demanded security, and drove the economy. The Saudi-Tapline Convention exempted the company from an income tax or royalties during its first fifteen years. In exchange, Tapline would pay for "all reasonable and necessary expenses" incurred by the government for protection, administration, customs, health, and municipal works and establish schools and hospitals in the area of the pipeline stations. The company paid a security fee and extended the provision of water and services in the newly established administrative Northern Frontiers Province—originally referred to as the Tapline Governorate. The company drilled fifty-two groundwater wells and provided medical services in its clinics along the right-of-way. It planned the towns adjacent to the pumping stations of Turaif, Rafha, Ar'ar, and Qaisumah; built their public facilities and schools; and supported a home-ownership plan for its employees.

Although the interests along the northern boundary might have been partially shared by the transnational oil corporation and the state, the two were not in consensus over all operations. The space of flow was actually a site *through* which involved actors negotiated their political rationalities, whether claims for higher transit revenues, labor strikes, or interruptions of flow.

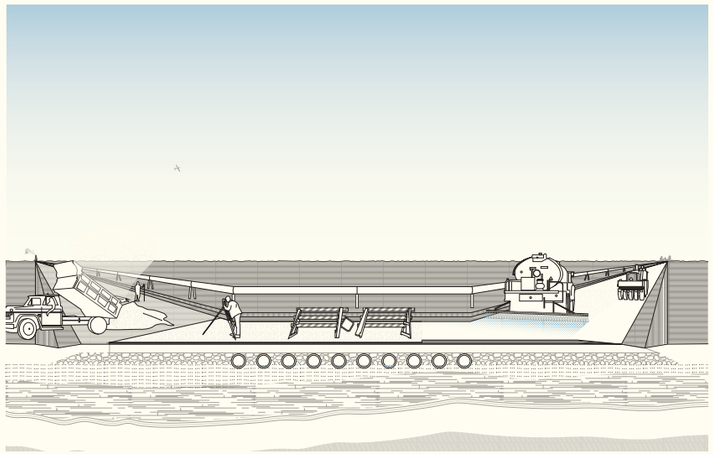


Section drawing illustrating the flow of water into water troughs from Aramco wells.

Water troughs were a microcosm of the political process. International Tapline officers made available the "hidden natural resource," local emirs regulated access, and different tribes, no longer confined to their territorial boundaries and water wells, negotiated, sometime violently, for access to water. From its early days of exploration, Aramco made a policy of drilling wells in isolated areas for Bedouins. Water wells drilled for company use were left as public water sources, and Aramco's annual reports to the government between

1947 and 1960 regularly referred to this program of water development.[13] Tapline's public relations with the Bedu and the governor of the Northern Province were sometimes mediated as "water-shows." Tapline's contribution to water development in the northern region was highlighted in company reports and during official visits to the province. For example, during his visit to Turaif, the minister of defense "expressed pleasure at seeing a filled camel trough and complimented the company for looking after the Bedu so well."[14] Through these early encounters, Tapline managers emphasized that they were making "every conscientious effort" on water supply, as outlined in the convention. To get some statistics into the files, aerial photographs were taken of the Bedu area to get a tent census. Also, at the company's request, the police made a list of all tribes represented, with the names of the headmen and with some guesses as to population, both human and animal.[15]

Tapline had a first taste of the "Bedouin problem" when newly drilled water wells became sites of conflict among the different factions that had come to depend on company wells as permanent water supplies during the summer months. A slowdown in water production, or a change in the wellhead fixtures, resulted in appeals for more water. Formal tribal delegations would report local delays and incidents to Tapline and to the Saudi governor of the province. A 1950 report entitled "Bedouin Survey Rafha" recounts the disputes that occurred when a tribal emir who claimed prior right to the water because Rafha fell within his normal range asked that other Bedouins be stopped from using the water.[16] Other tribal factions contended that they had been encouraged by the king to camp near Rafha rather than cross the Iraq border to reach the water of the Euphrates.[17] When the emir's letter to the relations representative at Rafha proved of no avail, he attempted to frighten off the other factions. In the process, the emir of the Northeast Border Force was wounded along with some of his men, and one soldier was killed. Tapline's representative in Jeddah soon after received a telegram from King Ibn Saud "protesting the incident and alleging that it would not have occurred but for the presence of Tapline operations in the area…that the shooting had occurred as a result of a dispute over water furnished by Tapline in a company trough, and that therefore there was need for a large protective force of Saudi soldiers such as has been advocated by the Government for the past four months."[18] The Tapline representative responding pointed out that such shooting scrapes had characterized the uncontrolled border areas for many years, and he did not think the presence of Tapline was a contributing factor. However, the incident left the representative with the difficulty of planning for the future at Rafha in the presence of multiple factions. It became evident that an "efficient" provision of water required regulation by a local government authority.[19]



Drawing of grading and paving of Tapline Road, a project funded by the Saudi government as part of a development agreement with Tapline.

A second friction-vignette reveals contradictory interests between the transportation and concession departments of an oil company through the story of the Tapline Road. The convention terms had obligated the Tapline company to construct, maintain, and grade the road along the pipeline at its own expense. During initial construction, an earth road was surfaced with decomposed limestone and marl, and crude oil, rather than asphalt, was used as a binder. The practice continued until the renegotiation of the convention terms in 1963.[20] In these negotiations, Aramco was most concerned about the repercussions of Tapline's choice to capitalize rather than expense the program on its own infrastructural obligations toward the kingdom. Aramco had been expensing its roads on the grounds that once a road was built, the oil company lost control of it and it in effect became public property. Aramco communicated to Tapline its concern that the government's approval to capitalize the road program set a precedent that Aramco would have to comply with on similar roads, past and future. Also at stake were schools and other community development projects, which Aramco expensed but which the company feared the Saudis might pressure them to capitalize in the future. "Any arguments that we might use for capitalizing the Tapline road can probably be turned against Aramco by the Government… The potential savings to Tapline shareholders by capitalizing the road must be compared with very much larger amounts which Aramco would have to pay the Government if forced to capitalize roads, schools, etc."[21] The road was eventually expensed. In this case, its status as a sister corporation and commitment to the larger financial interest of Aramco influenced Tapline's decision to meet the kingdom's developmental requests, despite its initial efforts to limit its commitments to the Saudi government.

Drawing of the Sidon oil spill and the fisherman it affected.

At a regional scale, the political dynamics between Nasser's pan-Arabism and the pro-Western allies of the Baghdad Pact unfolded around oil spills and labor dynamics in Tapline's Sidon Terminal, the end station on the Mediterranean, the setting of the third friction-vignette. King Saud's visit to Lebanon in 1957 symbolically marked the convergence of regional economic interests and American foreign policy. During this visit, John Noble, president of Tapline, welcomed the Saudi king and Lebanese president Camille Chamoun to Sidon Terminal, declaring, "This is an added source of pride to both Tapline and Medreco that they are a means by which the mutual interests of these countries are being served through the transportation of crude oil from Your Majesty's Kingdom."[22] At the same time, Sidon, home to the terminal, was growing into a stronghold for Nasserite affiliations, particularly with the 1957 parliamentary election of Ma'rouf Saad, a Sidon deputy with socialist labor claims and close ties to the local fishermen. Minor oil spills had begun to pollute the Lebanese coast, attracting the attention of the government, press, and the Sidon labor union under the leadership of Ayoub Shami. Tapline's management feared a strike and labor unrest in Lebanon: "just as the University of California at Berkeley has its Mario Savio, we have our Ayoub Shami."[23] After a major spill in 1961, the company's fears were confirmed when a court order sided with local landowners and fishermen affected by the pollution.[24] Sidon fishermen contended that chemicals the company used to disperse the oil resulted in damage to aquatic life. The Lebanese government had signed the international treaty protecting a zone extending 100 nautical miles from the coast, within which it was illegal to dispose of oil-contaminated ballast or bilges. While no legislation to support the treaty had been passed, the Lebanese government stressed to Tapline and other countries that the country intended to comply

with the treaty. At the same time, in "a gesture of goodwill toward the Sidon community," the company built two fishermen's storage buildings in the port area at a cost of about $10,000. During the inauguration ceremony in April 1961—in the presence of Ma'rouf Saad—John Noble called this "philanthropic undertaking by Tapline" a "symbol of the mutual friendship and respect which exists between the community of Sidon and Tapline."[25] The cover of the "Season's Greetings" issue of *Periscope*—the company publication—is charmingly illustrated with a color photograph of the Sidon storage facility. Later that year, in another sign of rapprochement with the fishermen, Tapline entered Sidon's Second Spring Festival with a gigantic fish float adorned with carnations, chrysanthemums, gladioli, and marguerites.[26]

Throughout the twentieth century, the growth of oil into a global commodity has transformed the Middle East into a hotspot of foreign policy and geopolitical negotiations between producing and transit states, both in peace and war times. Across the region, oil delineates territory through extraction fields, along transportation routes, and at terminal ports. From celebrations of abundance in the postwar *Felicia Arabia* to the anxieties of the 1973 Arab oil embargo through to the nationalization of oil resources and the Gulf Wars, the subject of oil has all but defined the region in newspapers and policy reports. Yet the profuse literature on oil and the Middle East has mostly addressed the geographies of oil as the exercise of diplomatic power over space. Left out of that narrative are the materialities, scales, and social processes necessary for the establishment and maintenance of oil flows. These three episodes in the life of the Tapline retrace the spatial configurations of such political and economic projects. They narrate how the pipeline has embodied a zone of friction, a zone in which various actors negotiated their overlapping and differing interests.

The Tapline narrative is also relevant to contemporary conversations on energy and infrastructure. At a time when the environment is at the forefront of design concerns, it is imperative that we not bracket out the politics of geography—that its frictions, alliances, and material realities are not ignored when lamenting the "energy crisis" or searching for renewable resources. Many contemporary energy projects continue to be presented as a set of technological artifacts in some faraway, scarcely populated desert. Such images are reminiscent of earlier environmental imaginaries, such as those that inspired the Tapline itself, in which the systemic attributes of the technology remained outside geographic examination. As we transition to new modes of energy, we must examine the geographies of new technological systems; if we fail to do so, we miss any opportunity for political and social transformation. The wind farms, solar fields, and offshore wells that will be our new energy landscape carry their own geographic narratives, their own frictions. It is the role of designers to make those visible.

1 John Cadman, "Middle East Geography in Relation to Petroleum," *Geographical Journal*, vol. 84, no. 3 (1934): 201–12.

2 Michael Clarke (dir.), *The Third River* (Iraq Petroleum Company, 1952), 29 min., 16mm film.

3 Daniel Da Cruz, "The Long Steel Shortcut," *Saudi Aramco World*, vol. 15, no. 5 (September 1964): 16–25.

4 Manuel Castells, *The Rise of the Network Society* (Cambridge: Blackwell, 1996), 412.

5 David Harvey, *Spaces of Capital: Towards a Critical Geography* (Edinburgh: Edinburgh University Press, 2001), 328.

6 Richard Sennett, *Flesh and Stone: The Body and the City in Western Civilization* (New York: Norton, 1994).

7 Erik Swyngedouw, "Circulations and Metabolisms: (Hybrid) Natures and (Cyborg) Cities," *Science as Culture*, vol. 15, no. 2 (2006): 105–21; Erik Swyngedouw and Maria Kaika, "Fetishizing the Modern City," *International Journal of Urban and Regional Research*, vol. 24, no. 2 (2000): 120–38.

8 See Rania Ghosn, "Where Are the Missing Spaces? The Geography of Some Uncommon Interests," *Perspecta* 45 (2012): 109–16.

9 Anna Tsing, *Friction: An Ethnography of Global Connection* (Princeton, NJ: Princeton University Press, 2005), 4.

10 Much of the discussion here draws from my dissertation: Rania Ghosn, "Geographies of Energy: The Case of the Trans-Arabian Pipeline" (DDes diss., Harvard University Graduate School of Design, 2010).

11 Timothy Mitchell, "Carbon Democracy," *Economy and Society* (2009): 399–432, 422.

12 Andrew Barry, "Technological Zones," *European Journal of Social Theory*, vol. 9, no. 2 (2006): 23–53; Gavin Bridge, "Global Production Networks and the Extractive Sector: Governing Resource-Based Development," *Journal of Economic Geography*, vol. 8, no. 3 (2008): 389–419.

13 J. P. Mandaville, "Bedouin Settlement in Saudi Arabia: Its Effect on Company Operations," report by Arabian Research Unit, December 1965, box 7, folder 15, William E. Mulligan Papers, Georgetown University Library Special Collections Research Center.

14 Turaif, June 13, 1951, box 6, folder 2, Mulligan Papers.

15 Turaif, July 25, 1951, box 6, folder 2, Mulligan Papers.

16 Rafha, July 13, 1950, box 11, folder 21, Mulligan Papers.

17 "The 'abdah section consistently claims that Rafha fell within its traditional range... the Aslam and Tuman from the larger section of the Shammar known as Sinjarah took the position that they had been encouraged by the King to camp near Rafha rather than to cross the Iraq border to reach the water of the Euphrates river." "Camel Trough Troubles," Rafha, June 18, 1950, box 11, folder 21, Mulligan Papers.

18 "Shooting Incident May 2 at Rafha Pump Station on Tapline Route," Foreign Service of the U.S. Rafha weekly report, May 3, 1950, box 11, folder 21, Mulligan Papers.

19 "Bedouin Survey Rafha," Rafha, July 13, 1950, box 11, folder 21, Mulligan Papers.

20 "Schedule of General Specifications Attached to Letter Agreement Dated 24 March 1963 between Government and Tapline," in "Tapline," n.d., Al Mashriq, http://almashriq.hiof.no/lebanon/300/380/388/tapline/tapline-road/html/56.html.

21 "Pipeline Road," April 26, 1963, William Chandler personal papers, Boise, Idaho, courtesy of Blaine Chandler and Gail Hawkins.

22 "King Saud Visits Sidon Terminal," *Pipeline Periscope*, vol. 5, no. 7 (November 1957): 1.

23 "Labor Situation, Lebanon," December 2, 1966, Chandler papers.

24 "Oil Pollution of the Sea," September 20, 1966, Chandler papers; "Oil on the Beaches," *Pipeline Periscope*, vol. 16, no. 7 (August 1966): 2.

25 "Sidon Fishermen Facilities Inaugurated," *Pipeline Periscope*, vol. 9, no. 4 (May 1961): 6–7.

26 "Tapline Float Scores Hit at Sidon Spring Festival," *Pipeline Periscope*, vol. 11, no. 6 (July 1963): 2.