BOEM DEEPWATER GULF OF MEXICO HISTORY PROJECT

Interviewee:	George Benoit
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Place:	Kingwood, Texas
Interviewer:	Jason Theriot
Ethnographic preface:	George Benoit hailed from Lafayette, Louisiana, and signed up with Tennessee Gas Transmission Co. (Tenneco) in 1960. There, he assisted in surveying and clearing the right-of-way for the Muskrat line. After being promoted to a corrosion technician at Tenneco in 1965, Benoit finished a degree at the University of Southwestern Louisiana. By 1972, Benoit was transferred to Houma, to work in Tenneco's engineering department. There, he helped to profile the subsea valves in the Gulf of Mexico, working to eliminate protrusions that would snag the nets of the local shrimpers. From 1974 to 1981, Benoit worked as chief inspector for several of Tenneco's major pipeline systems in the Gulf of Mexico. By the 1990s, Benoit worked as a superintendent in several districts for Tenneco. Benoit retired in 2008, after forty-three years in the business.

JT: This is an interview with Mr. George Benoit. B-e-n-o-i-t?

GB: Yes, that's correct.

JT: Today is February 25, 2010. We're up in Kingwood, Texas. This is Jason Theriot interview Mr. Benoit about his experience with the Tennessee Gas pipeline offshore in the Gulf of Mexico building big pipeline systems. So tell me, where are you from?

GB: From Lafayette, Louisiana. Started with Tennessee Gas about 1960 in the summers in New Iberia. Had a warehouse and a pipeline district on Highway 14 on the Muskrat line. What we used to do during the summertime was cut the right-of-way and maintain the road crossings and the canal crossings and different things like that between Wax Lake output on the Muskrat line, clear down to Crowley, approximately Crowley. That would have been where Kinder would have taken over.

Worked there four summers and then finished up my summer employment in Kinder, Louisiana, working for Superintendent Leonard Robinson, who was one of the chief inspectors on most of these new pipelines. Then I went to work for Tennessee Gas in Kinder, Louisiana, as a maintenance man in 1965, and then I progressed to a corrosion technician in 1966, '67. Graduated from the University of Southwestern Louisiana.

JT: What year was that?

GB: 1965.

JT: Was your family in the oil industry?

GB: No. My father was just an insurance person in Lafayette, Louisiana. My family didn't have any historical background. Kind of interesting, my father was selling a car to a guy named Bloom [phonetic], who knew Fred Clark, who later became vice president of the company, and I wound up getting a summer job. It's kind of a strange coincidence, but, you know, that just led to being—I was working for a bank, Cub City Bank in Lafayette, Louisiana, in about 1965, and Frank Clark came by to cash a check and he said, "Are you looking for work?"

I said, "Yeah."

He said, "Come by and see me." So that's real short on how that—

JT: So you were about eighteen, nineteen?

GB: I was about twenty. Nineteen years old when I went to work. I had to get my mother to sign for me.

JT: Did you go to high school at Lafayette High?

GB: I went to Cathedral High School, Lafayette.

JT: Is that right in the kind of the downtown area?

GB: Yes.

JT: Big tall church?

GB: It became Saint Thomas Moore later.

So at any rate, went to work in '65 for the Tennessee Gas Pipeline Company in Kinder and worked as a maintenance technician there, corrosion technician, later was recruited into the Human Resources Department. Seems erroneous, but it worked out. Then I was transferred back to Houma, Louisiana, worked in the Engineering Department.

JT: What year was that?

GB: That was 1972. I was an engineering technician, and as an engineering technician I received quite a bit of experience on the Gulf of Mexico. One of the things we had to do was profile all the valves in the Gulf of Mexico, and we needed to profile them because of the concerns of the shrimping industry to see if they were protruding above the bottom. If the valves were going to protrude above the bottom, then we needed to put some sort of guard or protection on them, both for the company's benefit and for the shrimpers' benefit.

JT: So to profile of the valves that were going to be built after '72, after you're done?

GB: Profile the existing valves as well, all the pipeline. So I started at Grand Isle, in the Grand Isle West Delta area, and went through all of the valves. At the time, there were eighty subsea valves in the Gulf of Mexico on our pipelines. We went to each location and every pipeline to do these profiles so that we could design a guard or what we were talking about, a sea dome, which was constructed by Oceaneering, to protect some of the mainline valves and some of the lateral pipeline valves.

JT: So what tools or instruments did you guys use in the seventies to locate those pipes, let's say, if they were in 150 feet of water?

GB: We had a company called Offshore Radius, which had a station, let's say like at Cameron, Grand Chenier, etc. These towers would project a signal, and when the signals intersected at certain—there was longitude and latitude intersection, point of intersection, that would be the point where we'd drop a buoy off a boat and then put a diver down on the buoy to locate the valve. We would calibrate on the jacket leg of a known platform that showed that our radius equipment was calibrated to the exact longitude and latitude of those legs. From there we would go out to the valve location, drop a buoy, Styrofoam buoy with a cane pole and sixty-five-pound weight. It was remarkably close. We could get within fifty feet of a valve in a hundred feet of water. Then the diver would go down on the rope with a searchlight and then run a circle clockwise, and then the rope would catch the valve and then walk back over the valve.

As you can imagine, sometimes it would go quite quickly where you had strong signals, and where the signals weren't so strong you would have more difficulty and have to make several drops and do several searches. But the divers from a company called S&H Diving Services or Oceaneering were pretty good at bottom surveying, which was their expertise, and the operation of our valves. We trained them on how to operate the valves and stuff. So it took three months to go to these valves, and I got pretty well oriented with the pipeline system doing that, and then we followed behind with an installation of net guards and sea domes.

So this was all about 1973, '74. Today we have a lot better control from the towers and LORAN and LO and transponders and all the different types of things today. They can control barges in this day and age where you had to drop buoys, and then we had to go back and pick up the buoys. You know, couldn't just leave them all over the Gulf. So, anyway, we did that, and that was the means of locating all of our facilities, and we had remarkably good success with it.

JT: All that was to place protective covering over.

GB: Yes. I have a sketch of every one of them I'll show you, and the guards. The sea domes were designed by us. We became uncomfortable with the sea domes when the hurricane came through and destroyed that sea dome in Ship Shoal 145. It tore off one of the half-inch valves on top of the blow-off, and so we had to do that repair. Of course, we went with more of the net-guard-type things, where it's designed to—when the trawling boards would flip the shrimp net, particularly chained to the trawling boards, it would flip it up.

JT: Completely miss—

GB: Yes, miss the guards. Later we got into bolder-profile valves in our designs, where the valves would be below the bottom, in about 1977, somewhere in there. We had lower-profile designs and we were able to be less of a hazard.

JT: I'm assuming that this was in response to some kind of regulation. If you're talking about '74, there was a lot of new coastal zone environmental regulations that were taking place at that time.

GB: CCM and Fishermen's Association and MMS were concerned with us getting low profile. We also needed to protect our valves. We had a big leak at the mouth of the Mississippi River in [unclear] in, whatever, 300 feet of water, just a little half-inch valve, and a two-inch bypass on the valve will cause a tremendous amount of disturbance and problem. There's no such thing as a little leak in the Gulf of Mexico. All leaks are big leaks. Even if it's a little Alka-Seltzer leak, it's still a significant leak, so it has to be addressed immediately and corrected as soon as possible, because you just don't want that happening. You don't want anything leaking in the Gulf. So we're very pretty conscientious about that type of stuff. Yeah, regulations wanted the top of the valve to be lower than the bottom.

JT: So you started off with a machete. Then you went to kind of the home-based Kinder as doing probably technical work, I guess, checking valves and making sure that the compressor station at Kinder ran properly.

GB: Yes, I operated in the compressor station.

JT: Then you went to Houma, where you actually got to get your feet wet in the Gulf.

GB: Right.

JT: So this is all before the 36 was laid?

GB: Yes, all before the 36 was laid.

JT: So then what was your role?

GB: The 36 was laid at about the same time that I was going across the Gulf doing profiles on valves.

JT: So were you involved in the 36?

GB: I was involved in the burial of the 36 and the dewatering of the 36 because I was doing other lateral pipelines. We had a pipeline that we laid, East Cameron 281 to East Cameron 49. I had some of the smaller projects. I was a chief inspector on some projects, while the more experienced inspectors, the veterans like Weeks and Gentry [phonetic] and those guys, were out laying the major water [unclear]. Weeks would have been—this was a thirty-inch. He built a thirty inch from ship shoal 145 Central, 145 to 643 West Cameron and picked up the tentacle. They had several tentacle laterals off of that. East Cameron 272 tied in, and had a big 30-inch valve. But sea domes were also installed. I came behind that particular one, installed sea domes over the major valves and laterals.

JT: So your job technically would have been described as an inspector.

GB: Yes, I was an inspector and chief inspector. Certain projects I was chief inspector on second form, and then I became a chief inspector from—it was like ’74 through 1981.

JT: So then you ran, kind of, the department of the engineers who were going out and doing what you did in the early seventies. You ran that department.

GB: Actually, I would have been more of a chief inspector over projects. Then I became the manager of marine construction, which I had taken Jeff W.’s place. Jeff and Double-O [Ollie Otis Jones] were the two bosses, and I worked for them. Then they had an organizational realignment and I wound up, for better or for worse, with marine construction manager at ’80, ’81, ’82.

JT: For Tenneco.

GB: For Tennessee Gas.

JT: Out of Houma?

GB: Out of Houma. So then I was over all the pipelines construction. We built about forty-four lines a year, a couple hundred million dollars.

JT: Did you do any work at the Cocodrie facility, upgrading it?

GB: Actually, Eddie Tolliver [phonetic] was the chief inspector on that, and they were reporting direct to Houston on the Cocodrie facility for the upgrading and new compression and new platforms and stuff of that nature. That went on from like '74 into the eighties. Every year there was a new installation, new platform, new tankage, improvements of the Cocodrie facility, and then came into new 36-inch lines.

JT: When you say "the 500," is that what you mean by the 36-inch line, the bluewater?

GB: Yes. Well, the bluewater header is everything from Pecan Island, the 36-inch line that goes to 245, then the seventy-five miles of 30-inch pipeline that went from Vermillion 245 central gathering to ship shoal 198 central gathering. Then you have the 26-inch line that comes into Cocodrie and the 36-inch line that comes into Cocodrie. From there they take off on the 500 system that goes to Leeville, Port Sulphur, Bay St. Louis, and all the way to Collinwood, Tennessee. So that system, the 500 system, really takes the 500 line and Bayou Sale and the Muskrat, and that's a 500 system. But what I think of as the 500 system is the 30-, 36-inch line that goes from Cocodrie all the way up to Collinwood, Tennessee. Try to put that into perspective. Everything else kind of gets bluewater header system.

JT: The way that I'm trying to think of this as, there's a gathering and feeder and main backbone lines.

GB: Right.

JT: Then there's the transmission lines that sends it northeast.

GB: Right. The transmission lines are—Kinder and Cocodrie are the gathering, the transmission lines, the 800 system that goes to Collinwood, Tennessee, and the 500 system that goes to Collinwood, Tennessee. Those are the three main lines that bring everything north.

JT: So then from Tennessee it goes even further north, to Boston and New York and Greenwich.

GB: Yes, and it goes up to Broad Run, West Virginia, yes. Exactly. So from Tennessee on down was where my experience was from the 1970s, eighties, pretty much, and then my experience from there—we're still on the experience part, right? My experience from there, I went to Houston as the manager of pipeline construction, which would have been on dry land and offshore. Then my experience was broadened through the system all the way through Connecticut, New York, Pennsylvania, through all the thirteen states and offshore part. Then as the manager of pipeline services, then from the—funny part, looks like they were trying to find a place for me but couldn't quite ever find something I could do. [laughs]

From there I went to Colombia, South America, and we designed a pipeline with Hocall [phonetic] to get oil of it. At that point in 1989, Tenneco Oil sold everything out and just left Tennessee, where I wound up as a superintendent in Batesville, Mississippi, and then superintendent over at Kinder and West Monroe, three different superintendent jobs over the nineties, late eighties and nineties. Then I did a special project called Teppsco [phonetic] for the company, where it was like a startup company where they did all the rehab work, and then I wound up as manager of pipeline services as the pipeline integrity, inline inspection, rehabilitation, those types of things for pipeline services, and I finished my career doing that.

So to say I had a little adventure, I had quite an adventure. [laughs] But the biggest adventure was the offshore. All of it has been superb, but it's just as far as the adventures, all the life-threatening experiences.

JT: You retired in 2000 and—

GB: Eight.

JT: So, full-time starting in 1965.

GB: Right.

JT: To 2008.

GB: Which would have been forty-three years. Quite a bit of experience. It's kind of hard to put it all together. So, as far as the Gulf was concerned, I really wasn't very competent as far as a surveyor was concerned, but I was a pretty good organizer and planner, super. Working the Gulf, I had to learn the ropes from the veterans, like Double-O, Garland [phonetic], all the rest of the guys. But I had to learn how to keep tally and how to keep note.

We have log notes on everything we ever did, everything, with every fifteen minutes. We kept note on what we were doing, what the divers were doing, what the crane operator was doing. There was a man on every shift, twenty-four hours a day. It was very well documented, because when it came to negotiating terms of settlement with Brown & Root, McDermott, could have been very contentious. And to say Brown & Root, Brown & Root worked on this principle, so everything that you could possibly have at them and even if they only reject half, it's better than if I'd have—and some of their managers—and I won't mention their names—some of their managers worked their—the IRS worked their income taxes the same way. See what you can get away with. If they catch you on something, I'm that much farther ahead. So that's the reason why we had to be so detailed with everything, setting up barge, setting up anchors. Today, if you're laying pipeline in the Gulf of Mexico, we'd probably be a generalization, barge setup, barge laying pipe, barge. We kept notes on everything we did, how we set the buoys, how we set the pipeline, when they ran anchors, when they didn't run anchors, when they were down on the dope station, when they were down on the welding processes, and they worked all the way through, down on [unclear]. Even during the weather downtime, we kept records of what they were doing and what they were working on during the [unclear], so that Jeff W. and the people that were negotiating the final terms, because at $4,500 an hour, we thought that was a lot. It's nothing compared to what they could charge [unclear]. [laughs]

JT: I guess it's because Brown & Root and, probably to a lesser extent, McDermott had a monopoly on laying deepwater pipes, on digging the trenches, on covering, and the way that the culture of the Gulf of Mexico evolved during that period when you came in, because you guys didn't really have a choice.

GB: Yes, exactly.

JT: These were the only two sheriffs in town who had the equipment, who had the experience to do this, and no matter what, you were going to have to pay top dollar to get it done.

GB: Yes, you're absolutely correct with that. Even to the point where the company would award contracts to people like Houston New Orleans, who [unclear] went to work for eventually.

JT: Houston Contractors?

GB: Houston Contractors, and they called it Houston New Orleans as the offshore part. [unclear] Ocean Services barge, based out of Houma, Louisiana, which is now Santa Fe. Each generation, they evolve into different names and different companies, but the barges changed names and stuff, but they're all the same. McDermott had a new big facility, had big barges. They had big derrick barges, but laying little pipelines off of those big derrick barges didn't—all they had to do was set up five or six stalls and they were much ready to go.

Guys like Scott [unclear]—Gary Vogt [phonetic]. Gary Vogt has his own diving company now, might be Cal Dive or something like that. But Gary was an engineer on McDermott's Leeboards [phonetic] 22 when we were laying Eugene

Island 349, which is the 30-inch that takes off of 198 here and goes out to 320 feet of water. Three hundred twenty feet of water, you know, after Cognac, still pretty significant depth of water in the seventies, probably the deepest line we had until Mississippi Canyon came around about 1980. Chevron, not Mississippi. Chevron had a platform out there, that's the reason I [unclear]. Might have been one of Shell's platforms.

But Eugene Island, we were picking up the Eugene Island gas from Marathon's platforms that they had out there and some of Tenneco's platforms and Texaco's platforms. We dropped off a loose end, and they had at that time, probably the first time I'd ever seen it, was an articulated stinger, where they would flood certain components. This articulated stinger, instead of the stiff stinger like we had laid in 150 feet of water, as you got into that deep water, then you flood different portions of pontoons and then supported that inflection point—

JT: Yes, all the way down.

GB: Pretty much all the way down, reduced it, very cautious, very careful, very concerned about laying, didn't really want to lay the pipeline down because it's important you keep laying because you didn't want to lay it down. Picking it up would have been harsh or—

So I'm going to tell you a story here. We got to the end within like a couple of hundred feet of the end where we're going to put it down, weld a cap down, and they were trying to lay it down, and it broke. The holdback cable broke, and it ripped all the stalls off, and it raised up, just like straight up in the air.

JT: The barge?

GB: No, the pipeline, the 30-inch pipeline.

JT: Coming out of the water?

GB: Yes, it came up out of the water, so we were real careful with its trajectory, you know, and so when it raised up, the captain or the people in the tower were sharp enough to say, "Let's get it out of there. Pull the anchors ahead as fast as we can," so it won't just stay up there and buckle.

JT: Buckle at the bottom, yes.

GB: We dropped it. Instead of laying it down, it got dropped in 320 feet of water. It's heavy pipe, 750 wall, three-and-a-half-inch concrete, you know what I mean? It's a heavy son of a gun. Why, everybody's in full panic. Oh, man, we buckled it. It's ruined. Wringing our hands, and we're saying, "Oh, man, this is really not good. This is not going to go well."

So this is the first time I'd ever seen remote control, RC. They brought this RCD out that has this new kind of new device here. We'll fly the pipeline and see if we have—so I got on one of the boats with the vehicle and they put it down in the water and they found the pipeline. We had some stress cracks in the concrete, but nothing—if it's buckled, it will blow up quite a bit and rip. Just minor stress cracks in the pipeline.

JT: Is that easy to repair?

GB: We didn't repair that minor stress cracks in the concrete.

JT: Concrete's just to keep it sunk.

GB: Yes. You can get that just laying off the stinger. Nothing really disastrous in there. So we picked it up again, flanged on the header with several pigs in it, the marine pigs, and dewatered it back to 198. We were real lucky. It was just luck. That's all that was. Of course, tower operators, you know, they never get any credit for anything. It's a long, hard, thankless job, but them being on top of their business just all ahead full, "Let it go," instead of just getting hung up there where you had a complete stress on it. So I remember that part of it. Happened to be on there at that time.

JT: You were on the barge?

GB: Yes. Oh, yes, I was inspector at that time. But so you see things like that.

Well, that's the Eugene Island 349. It became a big integral part of the bluewater system because it was bringing—now, that was a joint venture between Texas Eastern, Tennessee, Columbia. Several companies were all involved in the ownership of this, this Eugene Island 349.

Then the 36-inch, I was part of the burial of that 36 inch. That sugar sand bottom in the Ship Shoal area, it was very difficult. Brown & Root had to really make a fast pass. They made five passes over that bottom just to get the pipeline done.

JT: What was it, six foot?

GB: Well, yes. It had to be six foot with a 36 inch. Tried to get you three feet of coke. But they had to make—you run this, tried to make it go as fast as you could and then come back and make [unclear] so that it would—of course, then it covers up pretty much.

After Katrina and Rita came through, we could see why it needed to be buried. But that line didn't move. The 36-inch was solid. It was well buried and well taken.

JT: The 26-inch was the one that broke off, right?

GB: The 26-inch got away, yes. I just couldn't see. How can the Gulf of Mexico—I can understand it getting fifty-foot, sixty-foot seas in fifty feet of water, but how could it affect a 26-inch line and not affect a 36-inch line without somebody dragging anchor?

JT: Or something.

GB: Or something through the bottom. So that's just an opinion. Everybody said, no, it was just the sea state that did that.

JT: So let me back up a little bit, because one of my first questions is about the Muskrat line. So you were working as kind of a maintenance guy.

GB: Yes.

JT: So in other words, when they built the right-of-way and laid a pipe through like a forested area, let's say like near Crowley, you had to have a maintenance crew go in maybe every year or so and keep that forested area trimmed.

GB: Right. For example, it had willow trees that grow up. Now, the only reason we trim it is so that when we fly it with the helicopter, so we can detect if they have a gas leak or something.

JT: And land if you need to.

GB: Yes. To be able to continuing surveillance of the pipeline, if you do that, just let it grow back, it would reach the same level as the forest on the side. So from Crowley, say, to New Iberia, it's pretty much rice. Not a lot. But from in back in Franklin, Jeanerette, Franklin, all the way to Wax Lake, that's all woods. So in order to keep your right-of-way from encroaching and be able to do a continuing surveillance of your right-of-way, you have to be able to see the grass. Grass is not the problem. Willow trees and big trees that grow up on a pipeline, plus the roots of the trees can cause damage to your coating. There's a whole litany of things that goes [unclear].

JT: I guess the same thing could be said for the canal going from, let's say, Wax Lake east.

GB: Yes.

JT: You need to have it visible, cleared of obstructions. That's probably one of the reasons I know why they put up bulkheads to keep traffic out. But it's really for maintenance.

GB: Right. Well, now, the bulkheads are to keep the water from cutting back into the banks and keep the banks from eroding. A well-constructed bulkhead, as you know, is what keeps you [unclear]. Trees, you just want to keep it down, keep it so that you can continue to see what you have, and prevent it. You like the trees, the roots, from an erosion perspective. You just don't want it to get overrun.

JT: Here's kind of my first big question. So you worked on it, you worked a little bit on the Muskrat line, but then over the years you worked directly over a lot of this system. What would you say is the Muskrat line's big influence, the actual building of it, the technology used in the designing, planning, and installation phase? What would you say was the big influence of the Muskrat line on the way in which the oil and gas industry evolved from the coast moving offshore?

GB: Well, the techniques and the way the line was laid, excavated, were used on all the lines that came subsequent to the Muskrat line, same type. The way we approached the oyster leases in the marsh, the way we approached excavation, the way we picked line, which is so important as to what happens, making sure that the line is not going to impact, have a negative impact on the things that are around. The people that built that line and the attitudes and the approach of the Muskrat line, of course, there was more of them, first one, but that set the agenda for all the rest of the ones that came later. Of course, the improvements in the technology used.

Sure, you still needed to float your pipe in on the Muskrat line, but you had stock. You had floats. You had barrel floats, and then came Styrofoam, and you had to gather up all that stuff. You never left anything behind. It was banded to the pipe and it had to be floated in, and it had to be cut, settled. We still used those techniques when we crossed the Mississippi River in 1981. Still used barrels. We still used banding and cable that ran along the length of a pipeline so that when you got it in place, you just pulled it off, popped everything off. So those techniques were the same techniques that were used then. So that's more of a pathfinder for us and how it set the precedent on how things were done.

JT: This is just a logistical question. So the 16-inch Bayou Sale line that runs from Kinder to Bayou Sale was to gather gas from probably Texaco, Continental—

GB: Transco. There's a Transco connection right there about Franklin too, [unclear], things that came out of it.

JT: So that was Tennessee Gas' first venture into the southeast part, away from Lake Charles, away from Cameron.

GB: Right, from the western [unclear].

JT: Really, the only other people who had done any kind of serious natural gas pipe laying was United Gas and Texaco?

GB: Yes, exactly.

JT: Some of them were significant, like United Gas built one in ’51 that ran across Pontchartrain to Mobile. Texaco built one from Houma, Terrebonne, to Port Arthur in the fifties. But that was really just taking gas from one field and bringing it to a facility, to run a refinery, whatever. It had not been a gathering system yet until the Muskrat line to come into the entire delta region and gather all that gas. So the way that the Muskrat line is set up is it begins at Crowley?

GB: It begins at Kinder.

JT: So how does the Muskrat line fit in with the Bayou Sale 16-inch? Is it looped?

GB: It’s looped, fifty foot also, same [unclear].

JT: All the way to Crowley?

GB: Yes. Well, I mean, basically at some areas where we had to avoid some environmental issues or wherever, expand a little bit. But, basically, the two lines parallel each other all the way down to Bayou Sale, where 16-inch turns off.

JT: Right. It goes south.

GB: Goes south.

JT: Then the 24?

GB: The 24 just keeps on.

JT: Does it go all the way up to Kinder, the 24?

GB: Yes, sir, the 24 and the 16 both go—

JT: What is in Crowley?

GB: We had a compressor station in Crowley at one time, but it’s like Egan Gas Storage is at Crowley now, and Egan brings the bluewater header in from Columbia Gulf. The 36-inch that comes from 245 ties in at Egan. So Egan B, what they call, and Egan Gas Storage wasn’t built until the nineties, but that hub right there at Egan was the main interconnect between Columbia Gulf and Tennessee.

JT: Egan, E-g-a-n?

GB: E-g-a-n, a little town right outside of Crowley. Egan B, the Columbia Gulf, from 245, that's where it ties into Bayou Sale. So you have two points of big tie-in there, one from bluewater header at Egan and Crowley and one for the bluewater header at Cocodrie. Break one, you can go either way. Close the valve, you close the valve on a platform—

JT: Go east or west.

GB: —go east and west. That's what I'm saying. This pipeline system, the remarkable part of it is its operating flexibility. It really can go—out of Kinder, you can discharge on the Bayou Sale or you can have a section on the Bayou Sale. You can go through the 800 line, you can take the 500 line and go through Natchitoches, you can take the 800 line—actually, you can take the 800 line if you wanted to. You'd have to use some other people's pipeline, but you can take the 800 line and go to Texas.

So the flexibility—the West Cameron area gas came originally through Grand Chenier 16-inch. Then we had the CATCO one, the 30-inch one, that came in. You can discharge on one, you can bring it offshore, or you can put them on suction and sort of run a pig sometime when we want to. We take gas off of one line, put it in another line, run a pig to Grand Chenier, turning it back around, go the other way. So it's remarkable on the flexibility. There's 108 different combinations of line service at Kinder, Louisiana. I was stunned.

JT: I drove by there. We went to Coushatta, and I drove past. I was with my wife. "That's Kinder."

GB: I did not understand that until I became superintendent over there. I had no idea that you could do that kind of thing with it. You could take gas off of the 800 system and go [unclear] Tennessee and run it back through the 500 system through the Muskrat and [unclear] lines. Or you can take any combination of it. You can take Bayou Sale lines put them on suction, you can put them on discharge. So when you ask, it's almost like a huge question when you say, well, what's the significance of it, the significance of it is that it's hooked up to the bluewater header in two different ways. But that's when you consider that your main gas supply for the whole United States was coming off of the bluewater system at one point in time.

JT: Which is how many trained cubic feet a day?

GB: It was like 1.2 billion cubic feet a day. That's what it was. Today it's like 400 million. But at one time, that was your gas supply. You owned the gas, you transported the gas. It was your system. Each one of the pipeline companies was a separate individual entity.

JT: That one billion was going up to anybody from Mississippi to Tennessee all the way up to Maine.

GB: When it gets together at Collinwood, Tennessee, where the 800 line and the 500 lines come together at Collinwood, you still have some flexibility. So if anything happened to your pipeline, or if you had to do maintenance or cut it or take it out of service, you still had the flexibility. You weren't going to lose it. It might have been a little bit longer route. At one point it became more efficient to discharge on Kinder's Bayou Sale lines and go through the bluewater header and through Cocodrie than it did to go up the 800 system, because—

JT: Through Natchitoches?

GB: Yes. Or the 800 system going through Alexandria and up through Winnsboro and then Lake Providence and across [unclear]. So we're talking about pretty, I thought—I've always been impressed by its flexibility. How could those guys see that much flexibility in their systems?

JT: The vision, can that be attributed to Gardner Symonds or the culture and the management strategies that he had either instilled in his lower guys?

GB: Oh, yes.

JT: What makes somebody look at a map of Louisiana in 1950 and say, "We're going to build a major connecting system in Kinder, Louisiana, right here on the map"? Boom. Is that a Gardner Symonds–

GB: He, of course, the head of the corporation, had a lot of influence on the people that he picked, like Joe Parish [phonetic] and Harry Long and Bill Such.

JT: Such, S-u-c-h?

GB: S-u-c-h.

JT: And Symonds, S-y-m-o-n-d-s?

GB: Yes, sir. That's correct. And Neusham Carroway [phonetic] and [Berard] Dailey and all the people that you've interviewed, all of those were very good, competent, capable people. Certainly Mr. Symonds had vision of transporting gas to the northeastern United States to be able to keep the industries going, etc., and the investment. He did not like being regulated. You can read anything you want about it, but he was very unhappy about the FPC. But the people that he picked, Joe Parish, Harry Long, Bill Such, all the folks that went down this pipeline system, were the ones that had the vision and did the study and did the work and had the intelligence to be able to pick those systems. Sometimes where the resource was located kind of dictated where you—

JT: Right. They always said that he was a financial wizard.

GB: Yes, sure.

JT: But I've always thought that a good leader surrounds himself with real good managers also.

GB: Right. That's what I think. He was at the top of the corporation, but I don't think he got into the day-to-day things like the other guys did. And there's been a lot of people that's come through this corporation, the Double-O Joneses and the Jeff W.'s and a lot of people that aren't with us anymore, that really had some very important input into how the system wound up and worked on it. It never got very much further than arm's length. It never did.

Now, Mr. Symonds was up at the top of the corporation growing the company. He believed in every unit should carry its own weight. The pipeline needs to make its own weight, and the oil company needs to produce its revenues, one company. Now, the way things wound up, it wound up that the oil companies kept leeching off of the cash reserves of the pipeline company, and it's just that way to this day. It's my opinion, but E&P is living off of the pipeline income that El Paso does. Maybe it's just a necessity for it to be that way, for you to be able to explore and find new resources, but Mr. Symonds was very adamant about if it was Newport News Shipbuilding or Pipes Incorporation America or pipeline or E&P or Morgan or whatever it was, every component of the company had to carry, should be able to produce its own value, or else you need to get rid of it.

So, I mean, he picked the right folks. Joe Fossard [phonetic]. That speaks for itself. Very competent man. Not only could he succeed with Tenneco, but when he left Tenneco, he succeeded. He just continued to succeed. So that's the reason why I think many of the Tenneco people are still loyal to these people to this day in the clubs.

JT: We saw that at that luncheon we went to.

GB: That's right. It was a spirit, esprit de corps, whatever it was. He believed, he knew that, "Yeah, I'm working twenty-four hours a day, seven days a week, but in the end, the company's going to look favorably upon this kind of thing. When they have to cut back, I won't be the first one to go."

JT: So back to '56 when they run the Muskrat line. All the gas that was being produced and sent into the feeders was sent up the 24 to Kinder and then turned around and compressed and that gas was sent up [unclear].

GB: The 800 line, yes.

JT: The 800 line all the way up to the New England area.

GB: That's right.

JT: The reason why that is, is because the gas was coming up at such a high pressure, is that right? There was no need to artificially move the gas from the coast.

GB: That's right. Yes, you could almost freefall, right. You had 1.2, 3 billion cubic feet a day coming into these points, and just like the West Cameron system, didn't need a compressor station till the 1960s. All of a sudden then about 1965, they needed to have a steam turbine there, and then they wound up putting one at East Cameron 49 to keep the fields alive.

JT: Because they were declining.

GB: You're absolutely right. High pressure from the wells, wellhead was sufficient to be able to get it to your first station there at Kinder.

JT: Let me back up a little bit. The first line that Tennessee Gas put in in coastal Louisiana was, I think, a 12-inch through Grand Chenier, called the Rollover line, that connected to a Magnolia Gathering pipeline that connected to a Pure Oil Vermillion 39—not 49, 39. Pure Oil found big gas discovery in 1950, but it had to cap it, had to shut it in. Magnolia built the offshore line. Magnolia Gathering Company, I think, was the name of it, thirty feet of water, nine miles to connect to a Tennessee Gas onshore terminal at Grand Chenier.

GB: Right. Right.

JT: Now, my question is, when Tennessee Gas built that first line from Kinder to Grand Chenier, was it to pick up gas in Grand Chenier or was it to have an available terminal to begin receiving gas from offshore? It was called the Rollover line.

GB: Rollover line would have been the one that comes off of Pecan Island? Rolls over, comes into Grand Chenier? That gas came from right offshore Pecan Island. And to have some little, like you said, they had some little connections along that 8-inch or 12-inch pipeline. Then it comes into Grand Chenier, into the CATCO plant for processing. Everything came through CATCO.

JT: Then in '55 they built a straight line from Kinder through Pecan Island, almost due north south to CATCO, and that became the Kinder CATCO line.

GB: That's right. Exactly. I'll show you some pictures of the post-Rita destruction of the CATCO facilities. It will be clearer to you how these things came in and what they looked like later on. But, anyway, yes.

JT: So tell me what you know about CATCO. The few things I've been able to dig up on it, of course, Data [phonetic] talks a lot about it. But this was the first offshore joint-venture gas-gathering operation, and oil, I guess. The five companies were in oil and gas. That started real early, like in the forties. But I don't know if they built pipelines until Tennessee Gas came along, to gather the gas from these producing fields. So tell me what you know about CATCO. Was it strictly isolated in the Cameron, West Cameron, East Cameron area?

GB: As far as CATCO Grand Chenier, to me, it's always been set right there just for the Tennessee Gas. That's the only gas that was coming through there.

JT: The only gas coming into the region, southwest region there.

GB: The only thing coming on Grand Chenier at that terminal. Now, they may have had some other, but that Continental Tidewater Getty facility there at Grand Chenier was all for the processing of just that Tennessee, all that gas that's coming in from offshore. Now, they may had another line coming in there, but it was like four separators and a turbine, a compressor that took the gas, separated the liquids, and then the CATCO facility took the liquids and then transported them. The dry gas was then put into the Tennessee. So the gas may have been greater than—that was when seven-pound gas was the criteria. You could not transport anything other than seven-pound gas, and that was the criteria. So that facility there at Grand Chenier, as the pipelines came into it, was there strictly to take the liquids out and dry them. Had carbon bead stacks. Every now and then they'd rupture one of those things and dump beads into our pipeline, and they'd wind up clogging our filters. I had the great duties of cleaning those things.

JT: This is a further-away picture, but this is a close-up. Here's Louisiana, so this right here, Kinder.

GB: That's Kinder.

JT: So this is the Rollover, and all of this is CATCO and Tennessee Gas, is that right?

GB: Yes.

JT: West Cameron and East Cameron?

GB: Right. See this 507 F right there? That's where the CATCO plant was.

JT: That's in Grand Chenier?

GB: That's where, and that's where we built our compressor station.
Let's take a break.

[Begin File 2]

JT: So tell me again about the CATCO. It was a consortium of groups that had found deep gas off of Lake Charles, Cameron.

GB: Yes.

JT: But they needed pipeline outlets to get it out, and Tennessee Gas came in, probably in '55, which may have preceded the Muskrat line, to start laying lines offshore.

GB: According to what I understand is about 1956, the 26-inch from East Cameron 49 was laid through the beach and into Grand Chenier, and that gas was processed and handled by CATCO, solely. Later, in the mid sixties, Tennessee Gas built its own compressor station there with a steam turbine and processed that gas to because it needed to get more pressure. As you said before, the pressure from the wellhead was taking care of everything and was free-flowing on into the beach before. So CATCO had a little small turbine that helped with the processing, little small [unclear] processor.

JT: Onshore?

GB: Onshore. But it wasn't enough to be able to keep it going all the way to Kinder as free-falling.

JT: So when you said CATCO would process the gas onshore—

GB: Take the liquids out.

JT: —which came from their offshore production via a Tennessee Gas pipeline from East Cameron 49.

GB: That's correct.

JT: Once the gas was dewatered, produced, dehydrated, they would keep the liquids and send the gas up through a Tennessee Gas pipeline to Kinder, which would have been Kinder CATCO.

GB: Right, and then they would bring either barges or trucks in to take off the liquids, haul off the liquids.

JT: Now, is that the basic setup for the CATCO and Tennessee Gas operation?

GB: Right.

JT: Is that how it remained? It might expand a little bit here and there over the years?

GB: It remained there in through the seventies, and we had Block 68 Central Gathering platform. We had West Cameron Block 68, [unclear] West Cameron.

JT: That ties into East Cameron 49 also?

GB: No.

JT: How does that gas get ashore?

GB: It's got its own pipeline. It's just a 20-inch pipeline that goes onshore, and it came into Transocean's yard, as I recall, and then it came into CATCO. It had a pipeline that came into CATCO, and then it all went up the Grand Chenier line.

JT: So East Cameron 49 is here. This is the big East Cameron area 49, see right here?

GB: Yes.

JT: So here, this is really Tennessee Gas' first big offshore venture, really.

GB: Yes, sir. Yes, sir.

JT: So this is where it all spans out and runs to onshore and then goes up to Kinder. Now, does it connect going west also, or no? Maybe eventually it did?

GB: It picked up the West Cameron 192 gas and comes into 49 as well.

JT: Okay, which is much further south.

GB: Right, and it's in West Cameron. Then, I'm trying to look in Block 68, 63, 65, 66, right in here somewhere, see there's a TGP line right there?

JT: Right, a little short one.

GB: Yes, that's where the Block 16 Central Gathering came in.

JT: It was just offshore.

GB: Yes.

JT: When was that built? Sixties?

GB: I'm thinking it's after '49.

JT: Does '49 connect back east?

GB: Forty-nine just goes to the beach right here, then go east. Everything comes in to 49 and gathers up and then goes into Grand Chenier. So then Block 16 comes in [unclear].

JT: So it's all coming into through beach in Vermillion Parish, all of CATCO's stuff?

GB: Yes. Cameron Parish. The Vermillion Parish would be the Rollover, right?

JT: Yes.

GB: Vermillion Parish would be Rollover. Cameron Parish would be the CATCO plant and Tennessee Gas plant. Then the Grand Chenier line takes off of their 16-inch line. That's one of the oldest lines right there. Then picks up Mobil's gas, used to be Mobil's gas from Cameron.

JT: In the marsh?

GB: In the marsh, a 12-inch.

JT: That's probably why they built it.

GB: Yes.

JT: Early, that first 16-inch, to get to Mobil.

GB: Yes. Then it really gets really close to Highway 14, parallels 14, and then comes into Sohio at Iowa. Used to be Sohio. They had a big field there. It's all played out, and then it goes into Kinder. So then you have two CATCO lines; we call them CATCO lines, a 26 and a 30. Then you have one Grand Chenier line, 16-inch, all of it going to Kinder. That used to be where all the gas was coming from. Then the same thing with the Visalia [phonetic] lines and Muskrat lines, which was the path line for all of these others. They all came into Kinder and all went up the 800 line.

The 800 system was a very significant system. Now most important is you had a road crossing change on the 800 system. Then that's how they built in this flexibility where they could do suction or discharge on these other lines, so they'd have the flexibility to go to Cocodrie or wherever. They had a 30-inch 800 line that went to Manville and it came right in here, came into Houston, picked up the gas from South Texas. Also could be a center.

JT: Agua Dulce.

GB: Agua Dulce, that's it. Then it crossed the Sabine River, and at the Sabine River it came—

JT: Ship channel.

GB: Yes, it then became channel industry.

JT: Interesting.

GB: It then became the Interstate. It gets complicated. This marriage is very complicated marriage. [laughs]

JT: So I think I've figured out what the CATCO system is. Now let's go over to the next. After Muskrat, the next big thing is the Delta Portland, which the central hub for it is at Port Sulphur?

GB: Right. That's right. The south pass gas comes into Port Sulphur. The 500 lines from Cocodrie come into Port Sulphur, and it goes from Port Sulphur to Bay St. Louis and on in Wyclosky, which is a whole different generation of gas. Wyclosky plant used to be Shell.

JT: Where is that?

GB: Outside Wyclosky.

JT: Port Sulphur? No.

GB: No. Port Sulphur, it's about twenty miles north of Port Sulphur if you cross the river.

JT: It's on the east side.

GB: That's right. You go. It's in St. Bernard Parish.

JT: How do you spell Wyclosky? No worry, I'll get it.

GB: Y-c-l-o-s-k-i, y-w, something like that. It's a town, or it's a place in St. Bernard Parish.

JT: What is the relationship between Muskrat and the Delta Portland line, if there is any?

GB: The Muskrat line brings the gas from bluewater system at Egan and all of the different Transco tie-over—Transco's got flexibility on it as well now—into Cocodrie for shipping north. So it can either go through Cocodrie or Kinder. As the pressures became reduced from offshore through the Columbia system at Pecan Island, that's when an additional compressor station was built at Crowley, and that was built in about, let's say, 1966 and lasted for maybe ten years, and then we took it out. It was no longer needed. So the gas from Egan Gas Storage and from the different compressions were capable of transporting the gas without the booster from Crowley.

Crowley is kind of like a line main line valve [unclear] place, and today Egan Gas Storage has a storage field here where you can put your gas in and take it out on demand. So it just continued. As the generations continued, it just became more and more and more flexible with the gas storage fields and the Southern Natural facility and its storage and combination, Bear Creek Storage on the 100 system. You just had so much flexibility where the customer was never in jeopardy, ever, ever in jeopardy.

JT: Let me back that up again and ask the question going back maybe ten years before you got there. If the Muskrat is completed in '56, it's the first pipelines into the Delta. In '57, '58, they build the Delta Portland line.

GB: Right.

JT: So from Port Sulphur going south, they built lines to gather gas in South Pass, Main Pass.

GB: That's right.

JT: So from the late 1950s perspective, does the Muskrat line and the Delta Portland line tie in anywhere?

GB: The Muskrat line and the Delta Portland tie in at Cocodrie.

JT: So the Delta Portland line ties into the 24-inch?

GB: Yes.

JT: And goes west to Cocodrie. Okay.

GB: See, it ties in at Cocodrie, actually. Where it comes in, it comes in and ties in at Cocodrie.

JT: So you're saying one of these is the Delta Portland and one of these is Muskrat. Here's the loop, from Leeville to Cocodrie?

GB: This would tie in and transport gas up these two lines. See this?

JT: Yes.

GB: This come into Cocodrie and ties in at this point, and then that gas is transported this way.

JT: That's the Muskrat, originally, one of them is.

GB: Yes.

JT: Then the Delta Portland is coming from the New Orleans area this way.

GB: Yes. We look at it going north. So without the Delta Portland line, we wouldn't even be able to—so we laid this and then we laid the Delta Portland. It wasn't there first. Don't you think that's the sequence of events?

JT: Right.

GB: We laid the Muskrat line into Cocodrie, and then from there we went north because we knew we had gas coming in from the offshore that had to be processed, and we had to have that gas going north. So in the fifties, you laid—1957, it would have seemed like you'd have had these things in place first, but it didn't. One came before the other. Whereas the 100 system, they kind of like six months they started up, and then six months later they were already to Broad Run. I don't know how they did that. [laughs] But they did it. But while they were dreaming about these things from Cocodrie across that marsh to Port Sulphur and north, and those things came into being because this gas from the bluewater head was coming this way.

JT: Right, but that wasn't until the sixties.

GB: Right. Well, yes, I didn't see the offshore coming in till the sixties, right?

JT: Right.

GB: So it was all about this gas coming from the marsh and the connections [unclear].

JT: Using Cocodrie as a hub.

GB: Using Cocodrie as a hub going—

JT: Back north.

GB: Yes.

JT: Through Port Sulphur.

GB: Through Port Sulphur.

JT: And to Bay St. Louis.

GB: Right. It goes to Leeville, Compression [phonetic] sometimes, Port Sulphur, going north, Wyclosky, picking up the gas at Wyclosky, and cleaning gas at Wyclosky, as a matter of fact, and then going up the Mississippi, right through Mississippi, all the way up to Tennessee.

JT: Then does it just jump into the main 800 line going northeast?

GB: The 800 line, everything meets at Collinwood, Tennessee.

JT: Where is Collinwood in relation to Portland?

GB: South. These three come in there. At Portland, then everything comes together. The 100 system, the 800 system, everything, the 500 comes to Portland, all center of the universe.

JT: Then from Portland it goes up.

GB: It goes north. Then it goes north. You know, as we discuss this thing, first in the fifties, this and then that, at the same time, almost simultaneously, the Muskrat line and the offshore coming in. Then to Port Sulphur. At the same time, like 1957, you're still laying the 500. You're laying a 30-inch 500 system going north.

JT: The idea was when they applied every year with the FPC, they have to have their finances, which Symonds was in a back room figuring out what to do with stocks and dividends and where to get the capital, and then they would submit the plans in spring or summer. They would have the hearings, and they would get the okay by fall to begin construction later that fall, to have the line finished the next year. They did one, one big one, every year. It almost seems like from '53, from the CATCO Kinder, '54, they did one every year.

GB: Yes. Understand that to me, being regulated, the more you invested, the better, the more you could make. So if he had his financials together—and his financial wizard was R.E. McGee [phonetic]. R.E. McGee was chief financial officer, and [unclear].

JT: Maggie [unclear]?

GB: Not Maggie. Maggie was the pipeline [unclear]. But R.E. McGee was the chief financial officer under Gardner Symonds, who was the key to Manufacturers, Hanover Trust, some of those big banks on the East Coast, and they had very wonderful relations, a very fluid relationship.

JT: All went well till they ran into a problem in '57 when they applied for a rate increase because of the increased cost for offshore gas, labor. Everything got more expensive. And the FPC said, "No, we're not going to award you a rate increase." So that's when they had to put the brakes on the Delta Portland project and then go through negotiations. They actually charged the rate to their customers, had to bond it, and then when the FPC came back and reversed it, they had to pay so many millions of dollars back to the customers. It's so complicated for me, I can only imagine what it was like for a guy like Symonds figuring all this out. But they put everything at the time that required in a project plan and came up with the rate base and then charged Con Edison or Brooklyn United or whoever it was up there a base, a rate base. They, in turn, charged the local Joe Blows that lived up there, but they had to bond it because the FPC had to approve of it. We had to go through this whole regulatory line which took six months, sometimes two years, and then finally at the end of the day, the FPC said, "No, you need to come down on that price a little bit." So they had to refund all of that money. That's why they had to bond it. They had to refund all that money back to their customers.

GB: Maybe that's why he was so upset about regulatory issues. He just had a real problem with the FPC. Those articles that Drew Pearson draws on in here, he's talking about the FPC and how he'd never do that again if he could avoid it. Then in about late seventies, it became, you know, whatever the—[laughs]

JT: That's when they ran out of gas?

GB: Supposedly they unregulated. Looked to me like they had done a better job when they were regulated. Same thing with the [unclear].

JT: So from Delta, and by this time you're coming out of college, you're machete-ing in the roseau cane and whatnot. So tell me what happens from Delta Portland to the first offshore 26 line from ship shoal. Did anything big happen in between that time, in the early sixties?

GB: I'm thinking that the bluewater header was the biggest thing to come along in any time, except for the 100 system getting to Broad Run, West Virginia, because once that was laid, that brought in—then you had a source. You had a supply, a really big-time supply. The people in charge had to have a great deal of faith in what they were doing with regard to Con Edison and Boston Gas, etc., because that was a big investment, big-time investment, and they had to have a lot of confidence in what the FPC was going to let them do what they needed to do, bring their gas in, because once those headers were built offshore, that served them for a good twenty years right there.

JT: The bluewater header is going to be probably this guy right here, at 26.

GB: Yes, goes through and then comes out across.

JT: You say it hits at a ship shoal.

GB: 190, 193, 192.

JT: Yes, this may be a little bit off.

GB: 190, 26-inch trunk line. Is that what it is? Might be a mistake in there, huh?

JT: The different color lines represent a different pipeline company. The Tennessee Gas is the pink and the white one.

GB: 145. Remember I was just talking about 145?

JT: Right. So what was that? What was Ship Shoal 145 [unclear]?

GB: 145 was kind of like the focal point. Here's 190 [unclear]. 145 is just where a subsea valve is, mainline valve is, on the 26-inch with a jumper [unclear]. Then there's a platform there. It was a Tenneco platform that has a little 12-inch that runs off and ties in. There's a little 20-inch that runs off the 1.68 ship shoal 158, gathers up a bunch of other Tenneco gas that used to be Tenneco gas.

Then from there everything goes to here, which is 198. There's 145. See Transco. It says that Transco's got an 80-inch. I kind of remember crossing that 80-inch with a jetski. But 198, and it's kind of interesting, there's a new field over here, platform, which was Foster's. [laughs] He must have bought up some of the Tenneco stuff, huh?

JT: So the reason for the bluewater header is because of this discovery?

GB: See how it comes across right here? The reason for the bluewater header?

JT: Initially, was because of this discovery here or this? The 195?

GB: No. I'm just thinking that it's picking up all of this gas that's coming along out here.

JT: So 195 would just be a hub.

GB: Yes, 198 is a Central Gathering platform. This here is just a mainline valve.

JT: You say it's on the subsea?

GB: Yes.

JT: Does it have some kind of protection?

GB: It had a sea dome on it. It doesn't have it anymore; just a neck on it. But the reason I'm focused on this, I used to come out of Cocodrie, go 10 degrees southwest and I can hit 45. You hit 98 on a boat. That's just the way it is. There's a mainline valve on the 26-inch. It's important to know, because if the 26 breaks anywhere in between, then you need to close that valve. Then you come to 198 and then in 105 South Marsh Island there's another block valve that you have. If this header breaks, you shut that valve. So I kind of look at those as points. Then, see, this is the header right here.

JT: The 26-inch, when they started laying it, they probably started at Cocodrie, went south and laid this 26 all the way to 145 to 198, and then turned due west and headed to South Marsh.

GB: I would say the 26-inch, they would have started right here [unclear] this way. The Marsh would have meant a push suction that came out, and they would tie in at the beach crossing. That would have been the strategy.

JT: They could have pushed a big 26-inch through that canal?

GB: Yeah. Oh, yeah. They just get it up on the floats, and your canals is six feet deep or more, or if you over-dig it, it would probably be eight feet. You can float half-mile sections of pipe, and you take one of those [unclear] pipe and just bring it in in sections. You gather it up in the ditch and pull them out, and then you cut the floats off of them, break it over with a flexi-float, which gives you a little something. Break it over, weld it, put it on, and so you might wind up with ten tie-ins. Then especially if you had a little canal crossing, Houma navigations, if you had them, you brought your string of pipe in across the canal, cut your floats. It goes into the bottoms, make sure that it's in the ditch, pick your tie-ins with [unclear].

JT: Jet it, clean it out?

GB: Actually, you don't even need to if you ditch. If you're dredging the canal and you cut your ditch deep enough, you can drop it in. The weight of the pipe will bury it in the ditch. As long as you top a pipe, three feet below the bottom or five feet whatever your design criteria is, well, then you'd be in good shape.

JT: So what's called the bluewater header?

GB: Bluewater header.

JT: This is it. Then it runs this way. Now, what is it? This will connect to Columbia at some point?

GB: This connects at about—I think, this may still be in Vermillion, right? See, it says bluewater. That's 245, 260. I think I'm in Vermillion, right, pink?

JT: Yes, because this is South Marsh, and the purple line marks the boundary.

GB: 247, 256, 245, right there.

JT: That's a Columbia tie-in?

GB: Columbia operated this. We owned half of it.

JT: That blue?

GB: Yes.

JT: That's a pipeline to Pecan Island.

GB: Thirty-six-inch pipeline to Pecan Island.

JT: Did it go to Kinder or it went to Columbia?

GB: It went to Columbia Gulf and then Columbia Gulf, from there it went to Egan, tied into the Muskrat line. See how this all comes together? So, laying the bluewater header in 1969, we already had 1957, and you had the leak in '57 like this one. Then we finished. We might have started in 1960, but we didn't finish this point, had to set a platform, get a 30-inch riser, and then a 36-inch. Then this all had to be coming in the Gulf, had to be—I'm saying Garland was—they had two chief inspectors. They had a Columbia Gulf chief inspector, and they had a—I was more involved in other things. But I remember Garland being party to the laying of this 36.

JT: Gentry?

GB: Gentry was on the 30-inch. Garland was on the 36-inch with Columbia Gulf. So we were partners. They had the lead, so we were the dancer. On the other one, we had this, wound it completely. But the reason to go to joint venture is, I don't know, maybe it was that FPC problem. Who knows?

JT: Costs?

GB: Costs, FPC. Reduce costs and FPC asking, “Why aren’t you doing this together?” and on and on. But we own this whole 30-inch, we own the 26, but it was joint-ventured on the 36, multiple joint, like five joint-venture partners.

JT: Where’s the 36 at?

GB: It parallels the—

JT: Here’s the 26, and there’s a bigger one.

GB: It doesn’t show up.

JT: There’s a Tennessee 30 right here.

GB: No, that’s the Eugene Island, 349, the one I talked about where we dropped it off at the end. The Marathon platform, 349, right here. That’s way out there, yes.

JT: I don’t have the parallel 30.

GB: They don’t have the 36. It’s just the 26-inch.

JT: Where does the 30-inch come into the beach?

GB: The 30-inch from—

JT: The other—

GB: From here?

JT: No, no.

GB: This stops at 198, and then the 36 goes into here.

JT: But is there a 36? Isn’t there a 30 or bigger line that parallels?

GB: Yes, there’s a 36-inch line comes out all the way to 198. It’s just not plotted. The 26 was the original, as you understand. Then the 500 system, that was 1957, ’60. It was kind of like everything fell in this point in time, and just exactly like you said, one built on the other. You might had two. You might have had 30-inch Delta Portland going on all the way to Collinwood, Tennessee, going on in 1957 at the same time that you had the Muskrat line going on in [unclear]. It was big-time construction, and that’s why you kept the construction crew, maybe ten, fifteen people, all the time. The part of the pipeline, the pipeline party chiefs became the chief inspectors. They did the preliminary survey and picked the router line and then they came in right behind and did the chief inspection and built the pipelines.

JT: Let's see, the 36 ties into Cocodrie, which is this guy, and boom.

GB: All the way to Tennessee.

JT: Then it splits up and probably gathers gas in [unclear].

GB: At Port Sulphur now, in the eighties we built the Mississippi Canyon line. We built the South Pass 55 line, 36-inch that brought gas into Cocodrie. So you had a number of things that took place back in the eighties that brought new gas in, but there is an [unclear] like you were talking about. And the funny part of it is, all my forty-three years it was Columbia Gulf this, Columbia Gulf that, Columbia Gulf won't maintain the valve, Columbia Gulf will maintain the valve. Columbia Gulf won't let us shut in [unclear]. Then, [unclear] was Columbia [unclear]. I forget what the name of the company that bought them, a West Virginia company or something like that.

Anyway, in the end they just said, "Okay, we'll settle with you. We'll give you the 36-inch and the compressor from Pecan Island. That's yours. You mess with it." They didn't want to have anything to do with the offshore. "But we won't let you have Egan B. We still control Egan B."

I thought, "Well, isn't that remarkable?" After all these years of meeting and negotiating with the bluewater header committee on how we would pig—I mean, anytime you have a pig, to pig the pipeline was a major operation.

JT: Tell me again, when we first talked about the difference between dry gas, which is easy, comes out high, gets sent wherever in a coastal region, versus the wet gas that comes off of the offshore and even the wetter stuff deeper offshore, how does that complicate things?

GB: In the sixties, seven-pound gas was—it didn't make any difference whether you took seven-pound gas offshore or it was at the [unclear]. You could not have seven-pound gas. Anything more than seven-pound gas, you shut the producer off automatically. If you caught them with wet gas, that was what the standard was. Only so much nitrogen content, had to have customer-quality gas.

Then things evolved and we came to the point where the producers laid the pipelines. We had take or pay. We contract for so many million a day from your well in Vermillion 245 for Chevron and you either take two million a day. If you get shut in for any reason, you're going to pay us anyway.

JT: If your gas is too wet or—

GB: Too wet, that's right. Then it became a very sensitive proposition. The one that I'm familiar, the Pennzoil platform in East Cameron 254 is a very interesting proposition because Pennzoil and the platform that we were taking gas off of. Then Pennzoil bought the platform from Tenneco. Well, Tenneco was trying to do whatever it took. If they had wet gas, they were going to—so we're your brother-in-arms here, and the pipeline started leaking. This is probabilistic at best, but they were putting all kinds of things, sulfur, high liquid concentration, wet gas, all kinds of things. Now, it never did damage our 36-inch in Vermillion 245, but there's no doubt that as the wells became less productive, so the pipeline didn't rupture and I had to go out and fix it, and I had to repair the riser. I had the only processor in my career I had to repair it five times. Pretty soon we abandoned it, because we couldn't repair it anymore. It was owned by a whole slew of different companies. It became the Pennzoil platform, then became somebody else's platform, kept selling it to a whole bunch of people. The 16-inch pipeline that tied into the [unclear].

But I did that all the way into the seventies, and we had questions regarding the gas-quality issues on East Cameron 254. I remember building platform piping for different pipelines in Vermillion 241, Vermillion 52, whatever, and we would have on our assembly a two-inch re-injection point at the pig launching center on the platform. I never could figure out what this two-inch re-injection point for the [unclear]. Then when you would come back to the platform, Tenneco had tied in some piping to these two-inch re-injections, and I asked, "What are you all doing here?" I asked the measurement people. Well, they measure the gas in the meters over here, and then they take the liquids and re-inject them into the pipeline to transport it to shore because it was too expensive to bring barges out there, and tankers and freighters come out to take the liquids, so they used our pipeline as a—

JT: Liquid transporter.

GB: Well, they put all kinds of—any kind of things that could not impact the environment. You couldn't dump saltwater overboard. You couldn't dump wastewater overboard. You couldn't do any waste. So whatever they could turn into liquid became part of our re-injection pipeline, and then, of course, it manifests itself ten years later in internal corrosion problems.

JT: Because these pipelines were not built to handle that type of material, that substance.

GB: Absolutely. It was built to handle dry gas, not wet gas, or at least non-corrosive liquids. When producers and operators, operators paid for the production that he can get off of that platform by whatever means he can get it off, not very honorable people. I'm making a generalization. I'm sure there's quite a few honorable people who are operators, but most of them I found that whatever they could get away with, that's what they did, and whatever it took for them to produce their standard threshold quantity that they had to produce for the month, they did whatever it took, especially when you weren't there.

JT: You're saying that that wasn't an isolated incident that that occurred.

GB: I'm saying that's more, and the reason I'm saying that is because of the pipelines that failed. Pipelines that failed in West Cameron, East Cameron, Vermillion, and all the internal corrosion problems that come from the gas-quality issue, as a result of the take-or-pay proposition, and then when the producers built the pipeline said, "Well, this is our pipeline, we'll put whatever we want in it." So then when you start taking it out at Grand Chenier and your pig pipeline, you find the products and the liquids, you find it in your sampling. It's a quality issue. Very difficult, and they can disguise it with all kinds of stuff. It's a very, very difficult proposition which cost our pipeline companies quite a bit.

Now, on the other hand, I guess it's better than dumping it overboard, but that's the only positive aspect of it. If you're going to take liquids and stuff, you should put on a freighter transport and handle it in an appropriate facility. But when you take it and you dump it in a pipeline, if the pipeline's not built a certain thickness, like the bluewater header, it's only a 375 oil 30-inch, very difficult in 150—I don't know how they laid it without buckling it, but 375 or 500 wall at the mainline valve, that's not much of a wall thickness on a large [unclear] pipeline.

So as the flow velocities decrease, as long as you got high flow and you're moving it along, as the flow velocities decrease, that sediment gets into the bottom of the pipe and then settles out there and winds up with pitting.

JT: And starts eating.

GB: Starts eating. So those particular things are just some of the horrors of maintaining offshore pipe. That's why Columbia Gulf says, "Yeah, you take that offshore pipeline and that compressor station along with it. We don't want to have anything to do with it." It's not Columbia Gulf anymore. It's not Semper either.

JT: But, again, if you look at it from the angle that I'm looking at it, again, it's the utilization of the infrastructure that's built in the wetlands, on the coast, onshore, where you've got all of this hydrocarbon material coming off of the offshore.

GB: Yes.

JT: After 1970s, you can't dump that stuff overboard, so why not send it back and let the onshore stuff deal with it.

GB: That's right. So Egan B's got to take it out or the Columbia Gulf plant. Nicor [phonetic] is the name of the company. Nicor had to take it out there, or Columbia Gulf, and [unclear]. Cocodrie processes it, and Port Charles, Leeville, all of those are catching all of that unprocessed liquids because they're not going to—now, some of them do. Some of them do the right thing, but it's all about cost of operation. Operator's falling behind on his cost on operations, what's he going to do? He runs twenty-four hours a day; you're there once a month. But, unfortunately, see, that's what they used to dump overboard. They used to have their separators, and they'd dumped their brine overboard and everything. But as the controls became more a problem, then they started using pipelines. That's my contention and I'm not going to let go of it because I caught them doing it too many times. [laughs]

JT: Let's talk about that a little bit. When I speak of permits and regulations, I'm not talking about the FPC and regulating the interstate transmission companies. I'm talking about the State of Louisiana's regulations that come out from the coastal zone management, '78, and I believe in 1980 is when they finally draft the regulatory framework for building these pipelines and dredging and drilling and all the oil and gas activities that occur along the coast. You mention that you guys did build some pipelines after 1980.

GB: Right.

JT: So walk me through, from a pipeliner's perspective, how did those permits change or shape or influence how the industry was operating in the wetlands before and after?

GB: The only thing they did was they made some improvements, and they required direction on drilling if you were going to make a beach crossing, because a conventional beach crossing could have been made in the seventies, whereas a conventional—well, I say conventional—where you dredge an open or a riverbank. Directional drill became the accepted technology, and there was no such thing as conventional.

JT: So you directionally drill from, let's say, 500 yards back north of the beach.

GB: More like 2500 feet.

JT: And you go underneath the beach—

GB: Yes, about [unclear].

JT: —where you avoid that barrier, or like even on Barrier Island, I would imagine that would work.

GB: Yes. Then you come up like in twenty feet of water offshore, which is not—it just became much more expensive. We did some directional drills at $98 a foot, which sounds reasonable in my time, and then it got to be $300, $400 a foot, and whoever the drillers were, they just started [unclear], and I don't know whether it was B.J.'s Services. I forget. Right now it escapes me a little bit. But still that particular thing on all inland waterways and all beach crossings, that's a good thing. There should have been some control on price. Things didn't increase 400 percent. Costs the same to directional drill in the eighties as it does today, basically. The way it winds up, it makes the customer pay, the customer being whoever buys the gas or wherever the tariff is on the gas, made those things become a lot more expensive. However, that was a very positive thing as far as the beach crossing was concerned; helped a lot on erosion issues.

In 1980, we did a Mississippi River crossing in Southwest Pass, 36-inch. That was the last conventional crossing that I ever did. Southwest Pass is 36-inch pipeline, associated—let's see. Reading & Bates did it, and we floated it across fifty-five feet of water. We had to go twenty feet below the bottom, and we did it on conventional dredge, just got one of the big dredges in there and just cut that bottom and floated it in, put it out.

Then all of a sudden, our engineers said, "Well, you can't do a conventional crossing anymore." Well, I'm assuming that the regulators are a problem. They kind of pushed them in that direction, but every time we did any kind of crossing, it was always directional drill, a drilled crossing, even to the point where you go way far inland and there was always drilled crossings. I don't know why. Anyway, that became a more expensive proposition, a more expensive item. But we did a good job on this, like I say. If it's done right, it can be done very effectively, and I mentioned this [unclear].

JT: So they'd drill a hole using heavy-duty equipment.

GB: Just like you drill, directional drill, for a well.

JT: Right, underneath the Mississippi River.

GB: Same equipment.

JT: Then pushed the pipe, 36-inch pipe, capped it, then pushed in [unclear].

GB: Pulling it through.

JT: Or pull it.

GB: They pull it through.

JT: Have to come on the other side.

GB: Yes. You have a pilot and then you come with your auger on the other side, and you're cutting ahead of the pipe, pulling the pipe back through. So your pilot goes through and then you cut and you pull it back through. So that part of it, the platform's pretty good. I didn't find that MMS or BLM was very overbearing in any kind of way. To me it looked like they were focusing a lot on platforms, but then after Katrina and Rita, kind of said, well, no wonder they were focusing on that, because the so-called hundred-year platforms that we had in 245, Chevron's platform, they didn't stand up. They bought them from Tenneco. But our Central Gathering platforms, all of them stood up. None of them went down. We had one in Sabine Pass. We had West Cameron 192, 49, all the rest of them, all of them. None of them went down. You know, Rita just actually came right in through there. So I don't know, maybe it's just kind of lays or the thickness or maybe the weld inspections that were done. I don't know exactly what happened.

Anyway, in answer to your question, I don't know. I think that the riprap on the bulkheads and the thing, I think all of that's very good. I didn't see anything really in the last years that caused any extraordinary cost or [unclear].

JT: I'm reading the records, and in the seventies they were real concerned about flotation canals.

GB: Oh yeah.

JT: I think the guidelines and permits that the state was required to draft in order to get the federal dollars for coastal zone management required that you could no longer do flotation canals. Do you know if you guys built any more after that? I haven't gotten to all those details yet. There was a concern about saltwater intrusion from the flotation.

GB: Most of our pipelines had already been built.

JT: So you just add them, just adding onto it, right?

GB: Yes. I can understand why, because it leaves a permanent scar. I can show you pictures of the original one that we talked about, the back floatation canal after Hurricane Rita. It's [unclear] and it was very obvious. But, yeah, that kind of makes it—if you don't have an existing floatation canal to go through, it's a problem.

JT: So what do you do, run it through somebody else's pipeline?

GB: If you can't build a floatation canal, you can't set up for your lay, you have to use something existing and then push it just with a little marsh buggy hoe and you have to push everything. You can't lay anything. You could set up on a river and push it.

JT: Is pushing less efficient than laying on a barge?

GB: You might catch more tides, theoretically. But no matter what you do in the marsh, you have to push it at some point. [laughs] Push or pull, it's one or the other. It's just a matter of getting your barge settled. Now, laying, it's faster.

You don't have as many tides, because you're just laying right on through. It's not absolutely positively almost necessary.

JT: See, because there's a couple—I know one in particular, Miami Corporation, because we lease our duck lease from Miami Corporation, and out of all the big names, LL&E, Continental, La Terre [phonetic], Miami Corporation is the only one that prohibits anything greater than a six-foot canal to lay a pipeline through their property. So I've always wondered if the reason why they chose to dredge flotation canals was to bring in the pipe-laid barges, as opposed to pushing the twenty-plus inches.

GB: Well, you have to have a starting point, yeah, and usually it's right off of across it, and so you dig in and put it close, and then you push both directions.

JT: I got a good picture out of Eugene Island at Point of Fir [phonetic] in 1953 when Magnolia and Pure Oil found all those fields off Eugene Island. United Gas built this humongous ramp, I mean several hundred feet in the air. They were welding two sections together and the crane was putting it up on top, and then there was welders up on this huge ramp. It looked like a platform laying on its side, like a fixed-layer platform like this, and the pipe was right here. They used the weight of the pipe slanting down the ramp to push. It's on the beach and that's how they—

GB: Because you know you can pull one of those things with a 14-foot aluminum boat. You can get a quarter-mile section. Once you get it moving, it's coming. As long as it's floating, it doesn't take much more than a 14-, 16-foot aluminum boat to tow it.

JT: What about your experience with maintenance? This is big. This is something that I've been looking at because [Berard] Dailey was long gone after that, after the sixties. But what about maintaining the plugs in the bulkheads? Is that something that's part of the maintenance of, let's say, your district or your section that you guys maintain a year? Do you inspect them every year, every other year, after a hurricane?

GB: Well, certainly after a hurricane you go back and try to look and see what kind of damage is done to your bulkheads. But it's one of those things that are very expensive on the district's budget. You have a five-year plan, replace this one and this one, and you set up a five-year plan, and bulkheads are part of it. It's just like maintenance of platforms, offshore platforms and onshore platforms. You have certain maintenance cycles that you go through on them. Now, some bulkheads, they last forever, almost. Rock and shell [phonetic] plugs, a lot of them won't, unless there's a significant event like a storm. Storm can come up there and knock one of those things out, and you just got to get the money to go unplug it. I think it's all part, or it had been in our Gulf Coast Division, it was all part of a five-year plan. You had a five-year plan. You had an annual plan. Set money aside for it and you work according.

JT: The reason why I ask is because in looking at the Muskrat line, plugs and bulkheads that some of which Dailey and those guys designed, much of which the landowners required, hundreds of these things. Of course, the Army Corps and the states require that. So the bulkheads are fine. It's these earth plugs that are made out of sand and gravel.

GB: [unclear] come up in there.

JT: Right. And after Hurricane Flossy in 1956, it washed out all those earth plugs. So then Dailey and a few others came up with this idea for a sheet pile. I'm sure you've seen those.

GB: Sheet pile bulkhead, yes.

JT: It was an H-frame. They actually have a name for them, Wilcox. Anyway, so they drove these concrete piles and then they inserted these sheets, these concrete sheets that were manufactured by somebody in Morgan City, and Dailey and them went out and installed them with a contractor, and the idea being that this is much sturdier than a rock pile, but you can also lift the sheet to get in if you need be, to do maintenance. But in touring around Cocodrie the last couple of years, I've seen all different kinds of bulkheads, and I'm wondering if this is just like a technology that evolves over time, over the fifty years, through these five-year maintenance programs. Do you guys go, "Okay, well, that didn't work too well. Let's come up with something new"? There's one area where it looks like it's a bunch of tires stuck together, but they're little small tires, and it's almost like it's a mat that you see laid out.

GB: Some of it was articulated mats, using a concrete mat. Right now I probably could go through my cards and get some contractors' names, but every five years you have a turnover of engineers. Each engineer thinks they reinvented the best way to do it.

JT: The wheel.

GB: Even if the other one was perfectly good. But once you got to these articulated mats, where you could put in a good base and put these mats on—

JT: Like a rock or shell base.

GB: Right.

JT: And then just laid the mat over it.

GB: Right, you put that mat over it, then those things became more—I think BLM, [unclear], etc., etc., like those particular types of installations. I mean, we went as far inland as Tennessee with these articulated mats, because they were the best for some of these rivers. The catenaries on the rivers would wash out and cause problems. But not every place is really that vulnerable. The Mississippi River, for example, it's not real swift-moving body of water, doesn't have a lot of boat traffic. It probably could get away with a regular rock and shell plug. But then you get in there where the crew boats are running around Cameron and Sabine Pass and stuff like that, then you need more of an engineering design, and operations will go to whoever the engineer is. Gulf Coast Division's Paul Craft [phonetic], Paul probably had the latest technology. Then a lot of it has to do with who the area manager is. The area manager says, "I don't need Paul's help," and he goes out and puts his perception of what a good deal is, and then most of it outlives whoever the boss is. [laughs]

JT: Because when you look on Google Earth and you track like the Muskrat line, you see these big white shell plugs, and there's thousands of them, probably tens of thousands of them throughout the marshes.

GB: Absolutely. And when we discover them, usually we see it's flown once a month.

JT: The line is flown once a month.

GB: Yes, every month.

JT: Has that always been the case, as far as you know?

GB: Even back to when there were fixed-wing airplanes we used to fly float airplanes.

JT: Patrol once a month.

GB: Patrol, maybe not then once a month, but kind of like—

JT: At least once a year?

GB: Oh yeah. Oh, yeah, once a quarter. Never much more than once a quarter. But once a month the aerial patrol flies these pipelines and they spot these issues. They give it back to the area manager, and the area manager then comes up with a solution and it becomes a budgetary item and it takes on a life of its own, depending on how severe or complicated the thing is. Everything being cost-driven, it's a quarter-million-dollar expense, it may have to get into next year's budget. So you manage it that way, and it's really part of our 811 or surveillance program to fly pipelines. We look for leaks, we look for encroachments, we look for problems, looking for problems, and then that's all written up and you submit a plan.

JT: One of the things that I'm looking at now is as the thirty years evolves and we get into kind of the more modern era, is you've got this whole—the title of my book is *Building America's Energy Corridor*.

GB: Right, right. That's good.

JT: What you've got now is you've got a situation where this corridor is starting to fall apart.

GB: Infrastructure, yes.

JT: Right. So one of the things that I'm looking at is how does the industry respond to the weakness and the deterioration of the coastal area and how do they put in new engineering designs to help protect and restore everything that's going on in the corridor.

GB: The erosion and sediment control issues like pipe not having sufficient cover, that's found through surveys. The bulkheads and the erosion issues, and our company, that's our program. It's not to be irresponsible in those things. The infrastructure of the pipeline, how well that pipeline wall thickness is holding up, onshore, is very good, super. We have run inline inspection tours over about 90 percent of the pipeline throughout the system all the way to the customers in New England. So that grade-wall thickness and the concerns that we had, but offshore not so easy. You can run an inline inspection tour and you can find all kinds of things and you say, "Where? Hundred feet over here? Two hundred feet over, four hundred? How do I broach this problem?"

So the inline inspection of pipelines is only done when you find a problem. You don't do it proactively like we do onshore. So the infrastructure of this particular pipeline system is solid. The erosion control, we hope, is being done like it's supposed to be done, because we do patrol. We do the right thing as far as finding these things of concern, and it's pointed out to us. Like you said, some property owners will say, "Hey, come over here and fix your problem." That's good, because you can't be everywhere at one time and you're not going to be able to pick it up as easily as somebody picking it up [unclear].

So I'm thinking now once you get past this, it's got to leak before you do something with it, and then after you find something really bad, then you have to continue to explore it till you find the problem. It's kind of like risers. We do riser inspections and platform inspections on a cyclical basis. Riser in [unclear] is the biggest threat.

JT: That's right at the curve?

GB: Well, it's at where the water splashes, four to six feet up. If somebody throws a cable around it and strips the coating off it in there, this thing's exposed to pitting. And atmospheric corrosion is a bigger threat, and for what? External corrosion below the ground, below the water, it's just not that big a threat. Very, very, very seldom do you have, unless somebody's working on it, rubbing on it, very seldom do you have a failure in that particular—but in the splash zone, so we do re-inspect the risers along with the jacket legs and everything like that of the platform, be able to tell if we got a problem. That's the biggest threat.

It's not the threat to human offshore. So if we have a problem, we'll fix it. If we don't have a problem, we're not going to go out and take 4,000 miles of pipe and run inline inspection tools when you don't have good control over where it's located. See?

JT: Yes. Part of the reason why I've been thinking about this is the time that I spent at Cocodrie, the storms that have really put a licking. I'm surprised the camp is still there. But in driving down to the Tennessee Gas facility, just looking around or climbing up the tower at Loom Com [phonetic] and looking and say, the Gulf is right here.

GB: Yes, it is.

JT: If there's a billion gas flowing through the Cocodrie facility, that's a lot of gas and that's a big part of the energy corridor, the energy infrastructure, and it's vulnerable. I mean, it's right there on the edge of the Gulf as the rest of everything is receding.

GB: I don't understand, you know. The thing that's evolving here, instead of rebuilding the gas infrastructure, you say it's down to 300 million today as opposed to 1.2 billion, we take in tankers and put it out there in West Cameron 643 out the end of this one, whichever one I showed you, 245 [unclear] 36, 30-inch line. We take LNG from there, fill up our pipelines, and transport it up the system. That's where the LNG comes in.

JT: Is it coming offshore?

GB: Yes.

JT: Are they doing that now?

GB: Yes.

JT: Really?

GB: Yes, it is. Instead of drilling—

JT: They're getting the cheap gas from Africa.

GB: That's what it's all about. It's all about money all the time.
I'm just kind of losing my [unclear].

JT: This is Marsh Island, so this is going to be Vermillion, South Marsh. You might need to turn the page.

GB: Here it is. Here it is. See this line here? The tanker's set up over here. I think there's a pink line right here somewhere.

JT: There's Newfield, Tennessee Gas 10-inch.

GB: Back down in here somewhere. Right up in here. Thirty-inch CGT 617, okay. It's up in here somewhere. Okay? They're showing Columbia, I guess. It's hard for me to say, 493. That was us. Pink, 645, CGT 16. So, anyway, when they come up, they anchor their big ships out there and take L&G and turn it to gas, and pump it right in through Columbia and Tennessee's pipelines. Fill them up.

JT: I didn't know that.

GB: So whatever reason, the gas is there. Instead of taking our own gas, we take Nigerian gas, Trinidad gas, and fill up our pipelines and deliver to customers that way. [unclear] is another one. Then you take it and you put it in your storage field, fill up your storage, and then when you need gas, you take it out of there. But you're paying a nice—they can charge you whatever. Depends on how you—

JT: Any idea how long that's been going on for?

GB: It's being going on since 2005, I think. Just comes right on up there and takes up the loose end.

JT: I know we got terminals up in here, closer to Sabine where the L&G comes in. I wasn't sure that—I didn't know that.

GB: Before they started, kicked that thing off, they were picking it up right here, filling Columbia and Tennessee. Columbia was taking it, processing it through Pecan Island, putting it in at Egan B.

JT: Then Egan B to Kinder.

GB: So we've got plenty of natural gas offshore. We have plenty of natural gas onshore. We have people that have a conventional logic that that's not the way to go, but it's not that big a threat. It's just not that big a threat. It's just got a bad reputation.

JT: The other thing that I saw was Independence Hub, which was the first big deepwater, ultra-deep Central Gathering for deep natural gas, ties back into Tennessee Gas platform somewhere south of the river.

GB: Is that West Cameron 35 or something? I mean, Grand Isle Block 35?

JT: Yes.

GB: I know where it is. We spent all kind of money trying to get Independence Hub right, and then, yes, that's the 20. I was on the 20-inch line we laid out to South Timbalier 36, but, yes, it goes in through Leeville.

JT: That's been thirty years ago that y'all built that.

GB: Yes. [laughs] We built that 20-inch out there. We made the beach crossing, and it was a conventional beach crossing at South Templar Island, and it held up just like it should, wasn't a drill crossing.

JT: But again it just showcases the infrastructure that was built originally, beginning in the fifties.

GB: Still there.

JT: Not only is it still there, but it's fully supporting what everybody's interested in now.

GB: You're exactly right, and it's not failed. The inline inspection, all these marsh pipelines, the Bayou Sale, that's all been inspected with an internal tube, tube or scope. We ran it. We did the whole thing, pigged it, cleaned it, intelligent pig, anything that found wall loss, significant wall loss, was all replaced and taken care of. It's just like new pipeline. There's nothing the matter with this infrastructure, and there's nothing matter with this offshore infrastructure. This one that we said laid in 1969 had zinc anode bracelets on, I'm sure the anodes are depleted by now. But external corrosion is not the threat that people would perceive it as from for some reason onshore it's just got more oxygen to it or whatever. I don't have the answer to that, but it a splash-on where you can get oxygen in the pipes, certainly corrosion is a problem. But this offshore infrastructure is good. It's good. It's like you said; you can put wind turbines and you can use all of these other things, but it doesn't have the infrastructure to get it to where you want it to be. This infrastructure is there, and we already use it, whether it's to transport electricity or whether it's energy, it's an energy corridor that's really solid. And I venture to say the other companies that use the 1104, the correct standards and procedures to build their pipelines, A&R, Sting Ray, Columbia Gulf, doesn't make any difference, Trans Coast, Texas Eastern, all those companies all use the same basic standards. Their pipelines are just as good.

JT: Do you think that if the majority of the people who consume on a regular basis natural gas from the Gulf of Mexico, this could be any one from a family living in Maine to a politician's office in Washington, D.C., do you think that if they knew, if they would have sat here and listened to this two-hour conversation about the integrity of the system and how it's evolved to where it is now in a few thousand feet of water deep offshore, that they would maybe have a different perspective?

GB: People that haven't worked in it or studied it the way you have probably have a perception that it's shoddy, about to blow up any minute, and all they hear about is the huge fireball that went up yesterday afternoon on CNN. The infrastructure of the pipeline's decaying, it's unsafe, it's unreliable. That's not true. When you have 14,000 miles of pipeline, your probability of one failure is pretty good. When you consider the investment, we invested over a billion dollars in inline inspection to make sure that that one event doesn't happen. It's kind of like some people say, we've got to be right 100 percent of the time. Just one mistake is disastrous for us. Can't afford to have an event that takes place inshore or offshore. The offshore is just astronomical cost. Inshore is 20 million dollars an event. You just don't allow yourself to have a decaying infrastructure.

JT: Let's wrap it up, Mr. Benoit.

GB: Okay.

JT: So what was the final verdict on the six miles of the 26-inch that broke off of the bluewater with Katrina? Was it six miles that popped up?

GB: Yes.

JT: Or some kind of way it came to the surface?

GB: This said that the wave height was such that it caused it to start cycling, get underneath the 26 and start cycling, and then when it broke loose, the forces of the gas ripped it up this height, and then the wave action just moved it so many miles off course. Seven miles off a 26-inch pipeline, to be moved seven miles offshore, just by wave action.

JT: Was it broke in two?

GB: Yes, whether it was broke in two spots, yes. One at the twenty, at the place where 145, it broke in there. Then it broke out at 158.

JT: So then the six-mile section that broke off is what they found six miles away?

GB: Seven, yes. We're talking about 26-inch pipe, 625 wall weighing 65 pounds a foot. Tons and tons. Yes, the forces of the wave action are tremendous. Why weren't the platforms knocked down if that wave action was that powerful? Why wasn't 145 platform knocked down or 198 platform knocked down or 158 or anything that was anywhere close to it? Whereas you could have a semi-submersible, try to drop a spud down. See, you can't prove it. Well, there's no scars in the bottom. After a hurricane like this, there's not going to be many scars left anywhere. It's going to be all smoothed out. I would prefer to believe that if one of the—and there were many, several, semi-submersibles that broke loose and toured the Gulf during that storm.

JT: There's a few that ended up over there on Sabine.

GB: That's what I mean.

JT: Onshore from way offshore.

GB: They made a tour of the Gulf, and why wouldn't they be able to latch onto six miles of pipe?

JT: Yes. Unintentionally, of course.

GB: Unintentionally. They're just trying to stop themselves, trying to get a foothold on what they want, whether it's a dragging anchor, a big barge, a big semi-submersible or a big drilling platform or whatever it is, that to me is [unclear]. Of course, could you prove it?

JT: No.

GB: I can't prove it. I can't prove it. But as opposed to just that wave action, yes, it knocked down the platform at Vermillion 245, Chevron's platform, and just left four piles sticking up out of the water. It was a tremendous force of action, but to be able to unbury, take a pipeline, whip it, break it loose, once the gas gets out of it, it's—

JT: So did the automatic shutdowns for a situation like that?

GB: The whole bluewater header blew down.

JT: So how did it shut off? Or did it spew gas?

GB: It just bled down. It just blew a thousand pounds of pressure.

JT: Then it just dried out and it stopped flowing?

GB: Stopped flowing. Didn't have nothing left on it but seawater. Zero. Had fifty pounds, maybe, which would have been [unclear] came from the seawater.

JT: How long did it take to get that bluewater back up and running?

GB: Well, several months. The problem, well, you could get the 198 to Cocodrie, you could get that going, but the seventy-five miles had a loose end at Vermillion 245. So we had to get Subsea, I think was the name of the company, and we had to fabricate a riser, a [unclear] to tie over into the pipeline, get that done and took a while. We got it done, though, by about November. It happened, I guess it was, October 5th?

JT: Right.

GB: October 5th to November, sometime in there, we managed to get that done. The biggest threat, though, was the piles, Chevron's piles. They would just float, flapping in the breeze, and we had to tie into the pipeline, get divers to work around that pipe, and we had to get a tug to wrap up the pilings and hold them while we worked on them. So it was all kinds of complications involved with the great Rita and Katrina.

JT: I'll turn it off. That's good enough.

[End of interview]