

EVALUATION OF
QUICK-DRY ASPHALT PAVING SEAL
(QDAPS)

by

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PRODUCT EVALUATION

Quick-Dry Asphalt Paving Seal (QDAPS) manufactured for Texas Refinery Corp. Fort Worth, Texas.

According to the manufacturer, the primary use for this product is "a moisture resistant preventative maintenance asphalt coating for coating and sealing and protecting black-top surface." A secondary use is to penetrate and rejuvenate existing pavements that may have aged excessively due to lack of compaction.

The manufacturer's suggested application rate is 1 1/2 gallons per 100 square feet. This will provide 12.03 mil. thickness dry coverage.

On July 14, 1987, Mr. Bill Miller, Independent Consultant, placed the product on the west parking lot of the Oregon State Highway Division Materials Laboratory. This area was judged to be suitable for testing QDAPS. While applying the product he explained about the sealing and penetrating ability of the product and showed us some pavement samples. Mr. Miller told us that full penetration (1 1/2" or so) should occur in three to four days.

QDAPS - CORING AND TESTING

On July 15 and again on July 20th, a set of 3, 6" diameter cores were cut from the treated area and a set of 3 from a control section outside the treated area.

Visual observation of the cores indicated that very little penetration had occurred (see photos). The cores were prepared for testing by sawing a section from each core area at 1/4 inch from the top and 1 1/2 inches from the top. The asphalt in the "control" and "treated" 1/4 inch top sections were tested using an infrared spectrophotometer. The asphalt in the "control" and "treated" 1 1/2 inch top sections were tested for viscosity and penetration. Test results are as follows:

Viscosity and Penetration of Recovered Asphalt 1 1/2 inch Middle Sections

	Control	Treated (sampled 7/15)	Treated (sampled 7/20)
Lab Report Number	87-13560	87-13558	87-13559
Vis. @ 275 F (cs)	1895	2272	2156
Vis. @ 140 F (P)	100,000	100,000	100,000
Pen. @ 77 F (cm/100)	11	12	13

Infrared Analysis

An infrared spectrum of the reclaimed asphalt from the pavement sections treated with QDAPS was obtained. Spectra of reclaimed asphalt reactions not treated with QDAPS were also recorded (see figures 1-3).

The spectra show that there is no difference between the samples containing QDAPS and those not treated with the sealer. This indicates that the residue left on the pavement after treated with QDAPS is chemically similar to the asphalt in place.

Infrared analysis can, therefore, not detect the presence of QDAPS in a pavement section that has been treated with this sealer.

Observation and Conclusions:

1. The QDAPS treated area was observed to be very slick when covered with water during the core sampling process.
2. QDAPS did not result in "full-penetration" or an observable "rejuvenation" of the asphalt cement in the 1 1/2-inch thick middle section. There was an insignificant difference in recovered viscosity and penetration between the treated and control areas.
3. There was no observable differences in the infrared analyzer spectrums for the asphalt in the top 1/4 inch sections from the treated and control areas. Based on these results, QDAPS would appear to be a cut back asphalt seal similar in composition to other asphalt seals once the volatile portion evaporates.
4. QDAPS does not appear to differ from conventional asphalt sealing products except for its quick drying properties. If competitively priced, it could be used anywhere a quick drying asphalt seal is necessary.

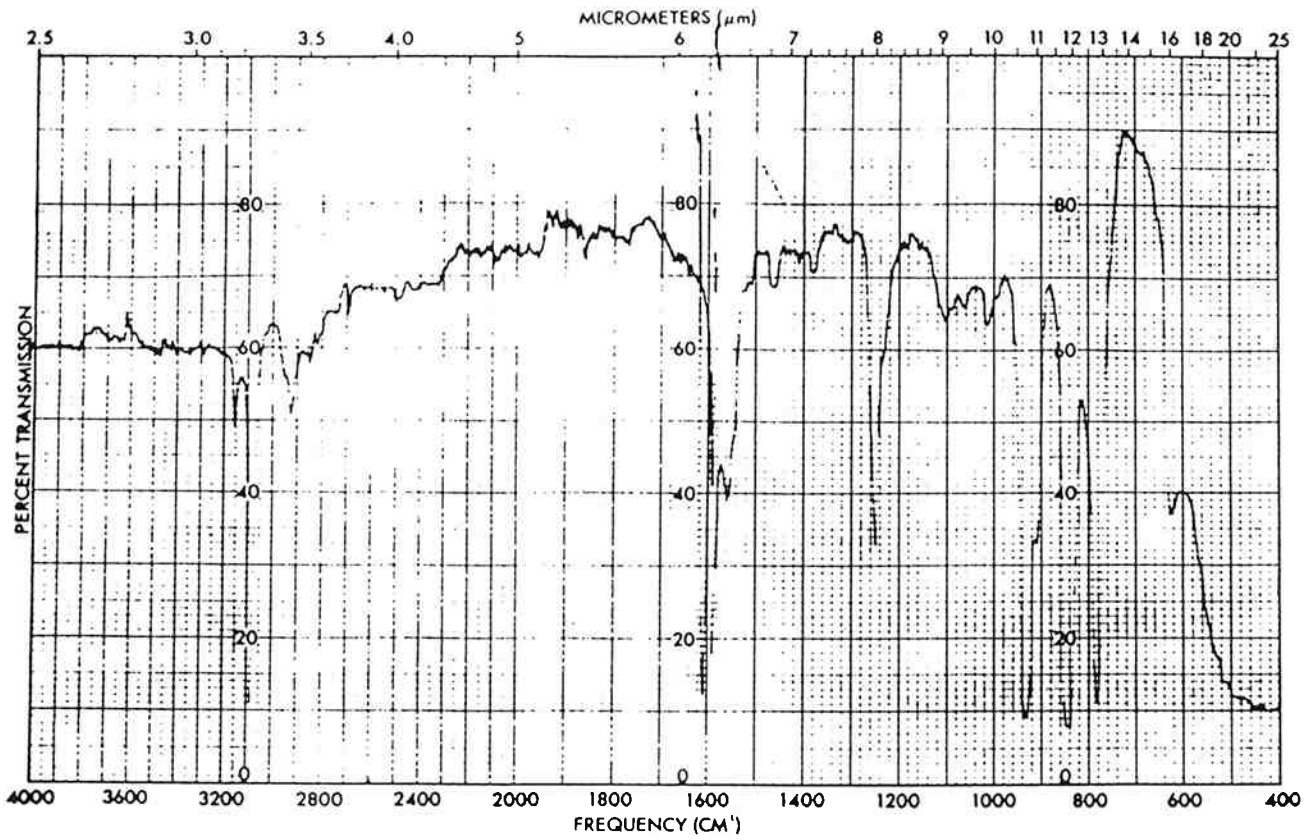


Figure 1a. Reclaimed asphalt with no QDAPS (sample #1)

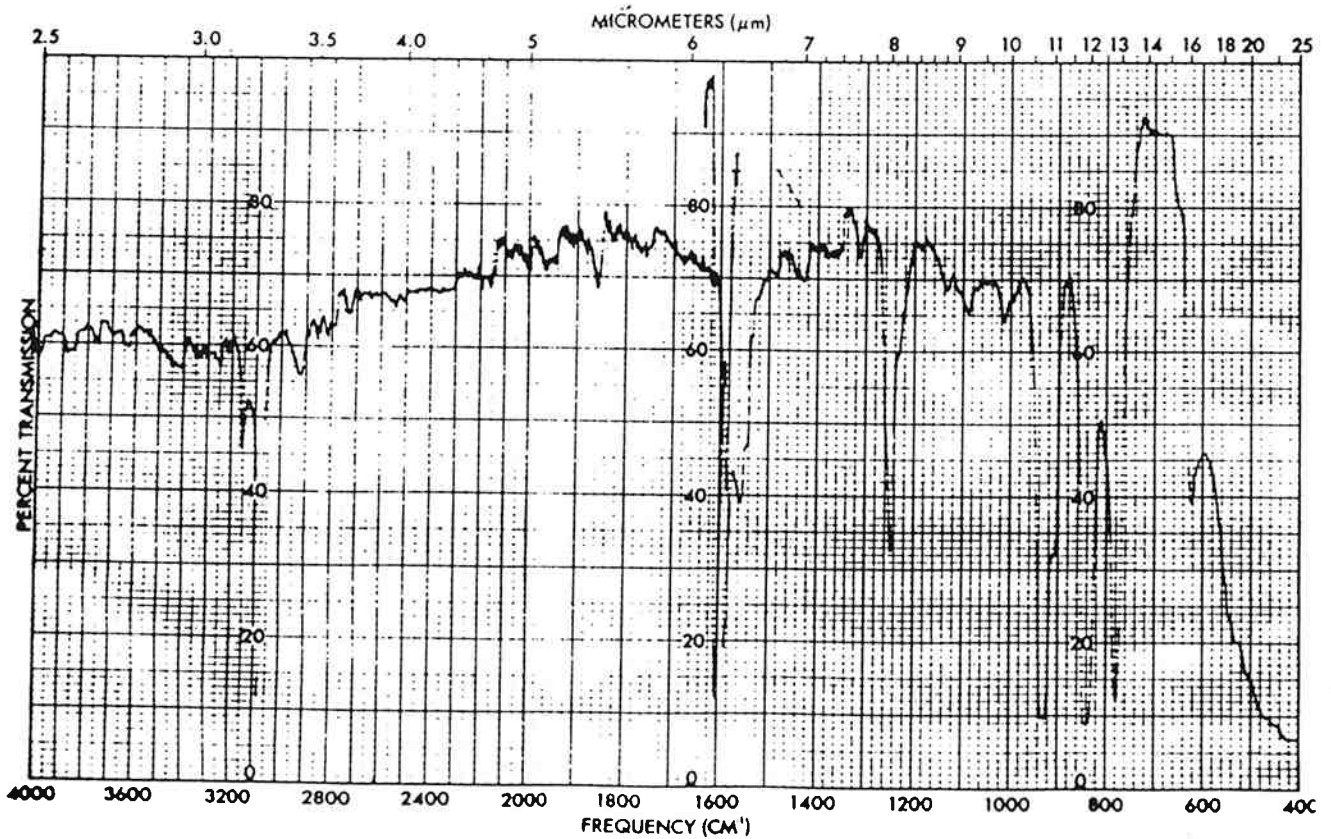


Figure 1b. Reclaimed asphalt with QDAPS (sample #1)

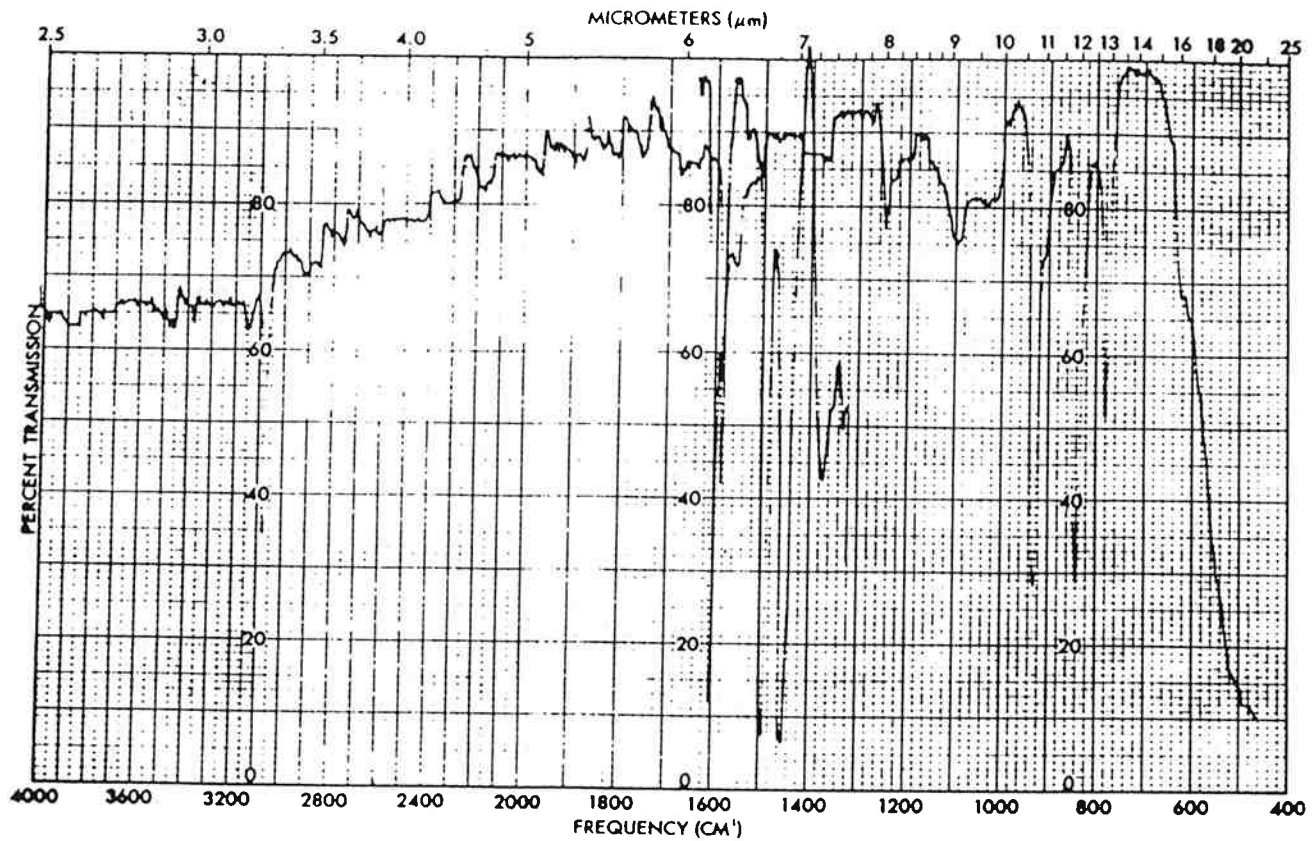


Figure 2a. Reclaimed asphalt with no QDAPS (sample #5)

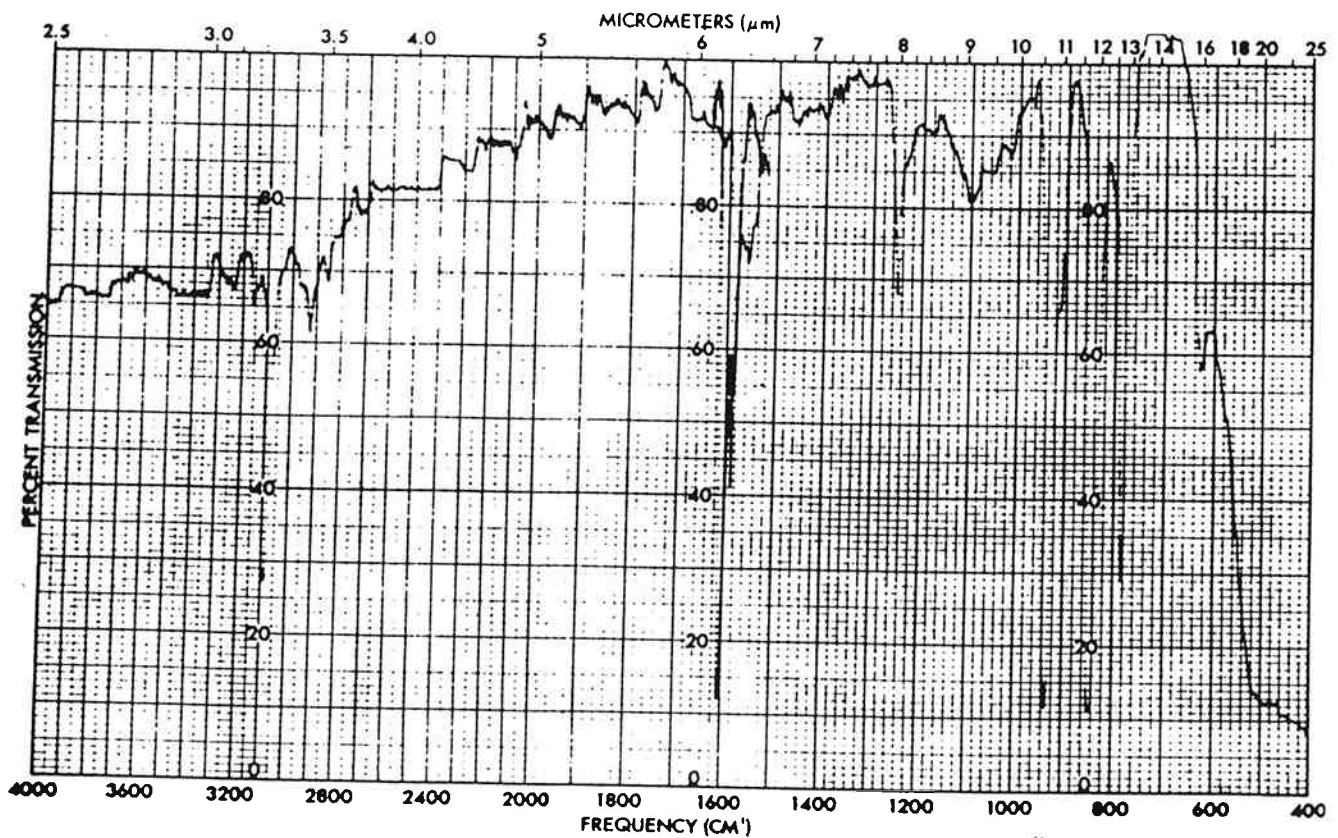


Figure 2b. Reclaimed asphalt with QDAPS (sample #5)

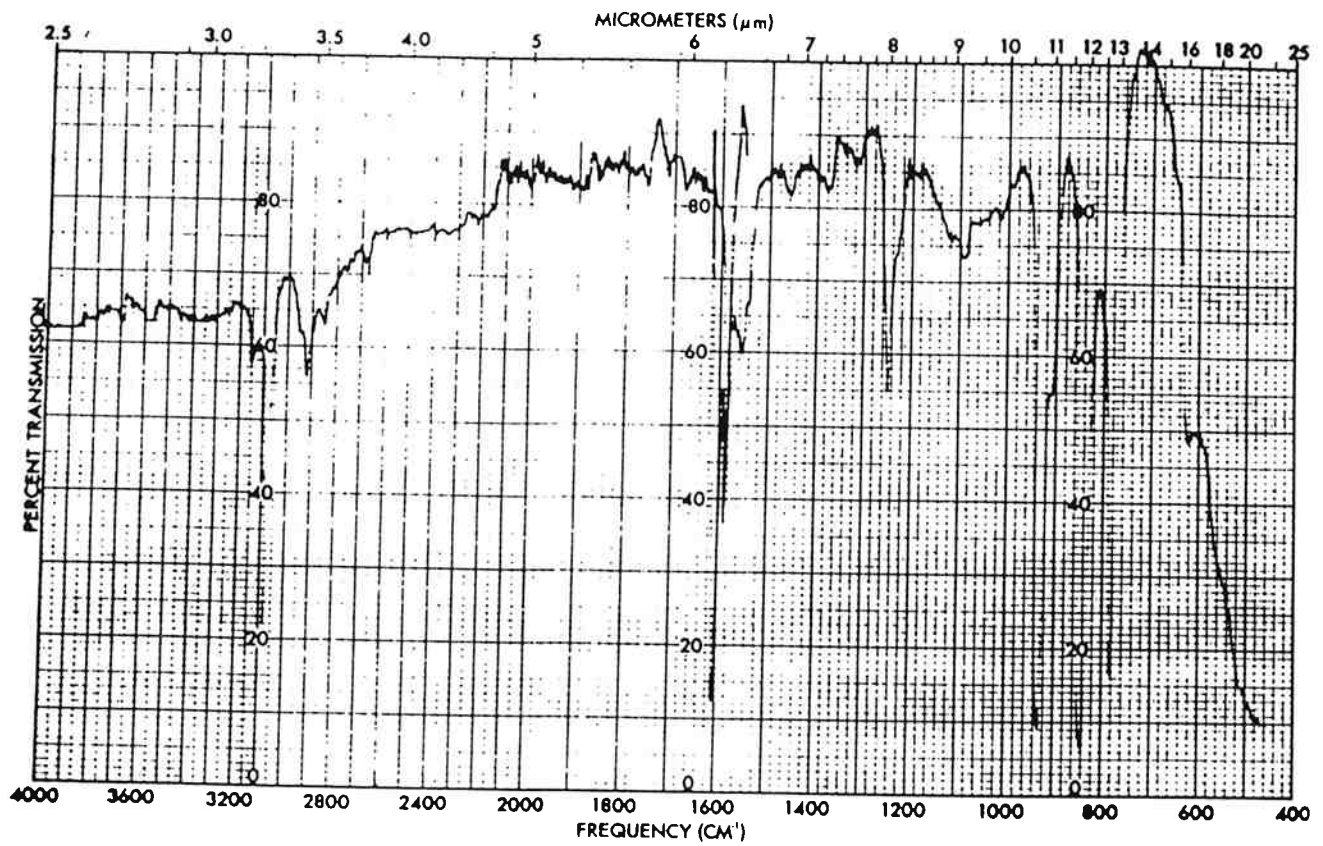


Figure 3a. Reclaimed asphalt with no QDAPS (sample # 7)

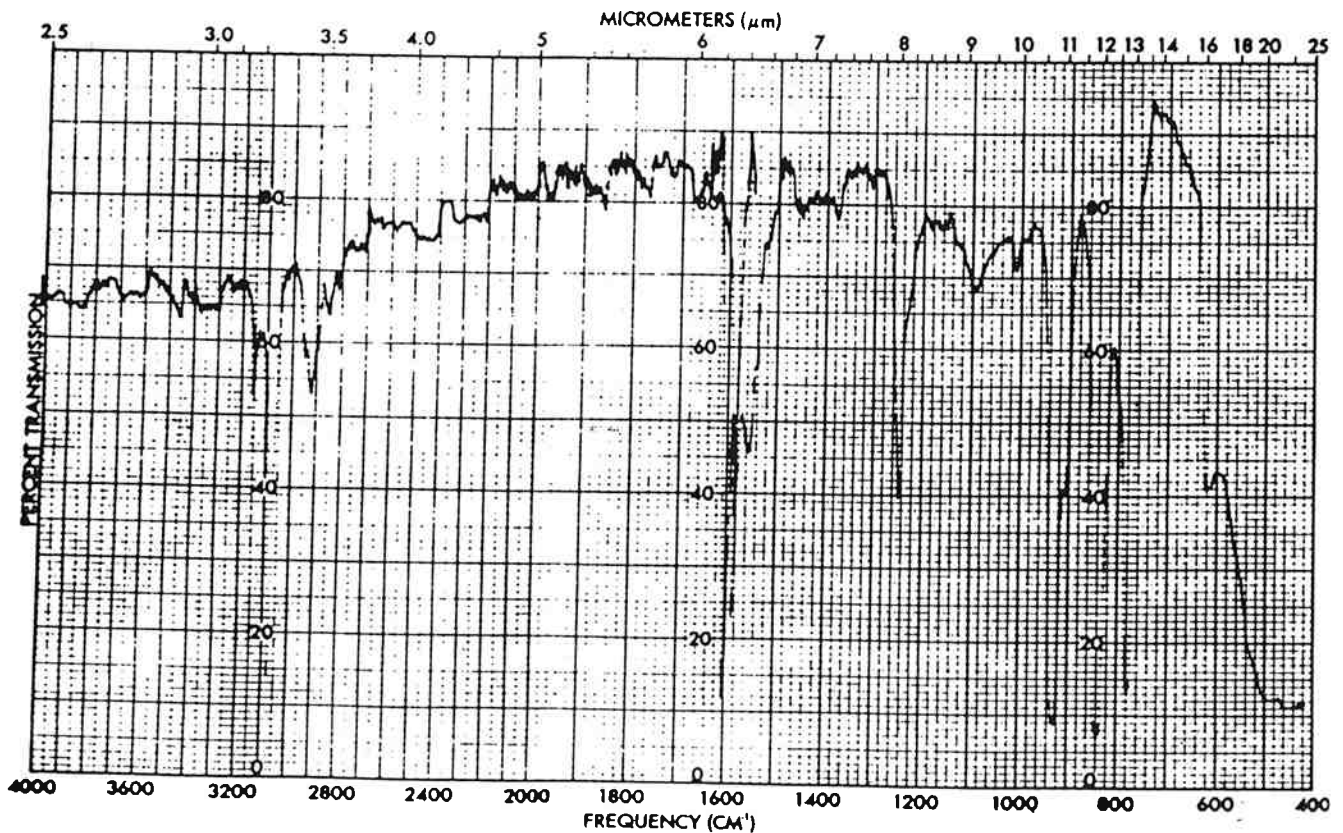


Figure 3b. Reclaimed asphalt with QDAPS (sample # 7)

6 inch diameter QDAPS cores

