PROJECT ACTION SHEET

RESOURCE EVALUATION BRANCH

PROJECT NUMBER: 9234-C4-1E

COMPANY: CHEVRON

REPORT TITLE: FINAL WELL REPORT CHEVRON EAST HUME RIVER N-10 TEST HOLE

The following action has been taken:

Receipt acknowledged: _____

Reports and maps date-stamped: MAY 17/90

Reports for review list edited: ✓

Inventory sheet made: ✓

Mylar: NO

REVIEW AND APPROVAL MADE BY: _____

****RETURN APPROVED REPORTS TO MIKE McLINTON******

COMMENTS: 3 COPIES of Report.

- note no hydrocarbon shows. FB MAY 17/90

Canada Oil and Gas Lands Administration | Administration du pétrole et du gaz des terres du Canada

Nova Scotia	☐	West Coast	☐
Newfoundland	☐	Northern	☒
Gulf of St. Lawrence	☐	Hudson Bay	☐

ABANDONMENT RECORD OF TEST HOLES

This form is to be submitted in duplicate for each test hole to the District Conservation Engineer not later than 90 days after completion of the test hole project.

HOLE DATA

Name: Chevron East Hume River N-10 Redrill

Area: Chevron East Hume River N-10

Coordinates: Lat: 65° 59' 57.30" N

Long: 129° 16' 5.23" W

Operator: Chevron Canada Resources

Drilling Rig or Unit: Shot Hole Rig

Contractor: Western Geophysical

Total Depth: 79.25 m

Spud Date: 1990-03-11-16:00

Date Abandoned: 1990-03-15-18:30

CASING AND CEMENTING

N/A

LOGS RUN

N/A

FORMATIONS OR FLUIDS ENCOUNTERED

Surface clay and sand

No fluids encountered, no hydrocarbon shows

ABANDONMENT PLUGS

Plastic plug and sawdust bag packed in at 10 m.

- Class "G" cement from 10 m to surface.

Signed: Roy S Rettie
for W. H. GARMAN

Title: Manager Drilling Division

Date: 1990-05-11

Company: Chevron Canada Resources

9234-C4-1E

Department of Energy, Mines and Resources | Ministère de l'Énergie, des Mines et des Ressources

Department of Indian Affairs and Northern Development | Ministère des Affaires indiennes et du Nord canadien

Canada

PROGRAM NUMBER 9234-C4-1E AREA EAST HUME RIVER

YEAR 1990 E.A. 322

FILED UNDER: SAME

REPORTS

OPERATIONS REPORT: NUMBER 2

- FINAL REPORT
- ABANDOMENT RECORD of TEST HOLES

INTERPRETATION REPORT: NUMBER 0

MAPS
SHOTPOINT MAPS NUMBER 0

INTERPRETATION NUMBER 0

OTHER NUMBER 0

SECTIONS NUMBER 0

FINAL WELL REPORT

CHEVRON EAST HUME RIVER N-10 TEST HOLE

65° 59' 57.30" N

129° 16' 5.23" W

Grid Area 66° 00', 129° 15'

1990-05-02

9234-C4-1E

TABLE OF CONTENTS

GENERAL DATA

i) Well Name: Chevron East Hume River N-10 Test Hole
Exploration Agreement Number: EL322
Operating License Number: 732
Federal Designation: N 65° 59' 57.30"/W 129° 16' 5.23"
Unit N, Section 10
Grid Area 66° 00', 129° 15'

ii) Test Hole Location:

The Test Hole was located 68 m at a bearing of N21E from the hole center at Chevron East Hume River N-10 at N 65° 59' 57.30"/W 129° 16' 5.23".

iii) Operator and Drilling Contractor

(OPERATOR)

Chevron Canada Resources
500 5 Avenue S.W.
CALGARY, Alberta
T2P 0L7
Phone 234-5000

(CONTRACTOR)

Western Geophysical
2612 37 Avenue N.E.
CALGARY, Alberta
T1Y 5V7
Phone 291-8100

iv) Drilling Unit

Western Geophysical Seismic Shot Hole Rig Unit #624

v) Difficulties and Delays

No difficulties or delays were encountered.

SUMMARY REPORT

Ground Elevation	74.4 m
Total Depth	79.25m (260 ft)
Date Spudded	1990-03-11-16:00 hours (refer to Appendix 1)
Date of Rig Release	1990-03-15-18:30 hours
Geologist	Dave Hendry
Engineers	Kevin Anderson, Bill Meyer, Rod Uchytil
Test Hole Status	Plugged and Abandoned
Hole Size	120.6 mm (4 3/4")
Casing	No casing run.
Drilling Fluid	Polymerized water
Abandonment	Plastic plug and sawdust bag packed in at 10 m. Cemented with Class "G" cement from 10 m to surface.
Ditch Samples	One set of 500 ml jars for Chevron and COGLA
Sample & Core Description	0 m - 79.25 m (refer to Appendix 2)
Cored Intervals	Core #1 59.44-60.96m, cut 1.52m, recovered 1.52m Core #2 60.96-62.48m, cut 1.52m, recovered 1.45m Core #3 62.48-64.01m, cut 1.52m, recovered 0.0 m Core #4 63.09-64.62m, cut 1.52m, recovered 1.52m Core #5 64.62-65.53m, cut 0.91m, recovered 0.0 m Core #6 65.53-67.06m, cut 1.52m, recovered 1.14m Core #7 67.06-68.58m, cut 1.52m, recovered 1.52m Core #8 68.58-70.10m, cut 1.52m, recovered 1.37m Core #9 70.10-71.63m, cut 1.52m, recovered 1.07m Core #10 71.63-73.15m, cut 1.52m, recovered 1.52m Core #11 77.72-79.25m, cut 1.52m, recovered 1.02m
Formation Tests	None
Logging	None
Fluids Encountered	No fluids encountered. No hydrocarbon shows.

APPENDIX 1

WELLSITE OPERATIONS SUMMARY

SUMMARY OF OPERATIONS AND PROGRESS

03-10: The driller and one helper from Western Geophysical arrived from an Amoco project at 13:30. They discussed the project with us, inspected their rig and ordered some parts for the water pump (without which they could not start).

03-11: Drove the Western driller out to meet the truck bringing in their parts on the road to Norman Wells to check that all the parts were as requested. The water pump was repaired and drilling started at 16:00. Competition for the water truck with the Shehtah rig forced us to stop at 18:30 at 18.29m. It was decided to wait and start again early in the morning with a water truck standing by permanently, rather than drill a portion, drain lines, pull out of the hole for the night, and then rig up and probably have to redrill much of it again in the morning.

03-12: Work on pump and prepare to drill, drill ahead checking samples to 59.44m. POOH to pick up core barrel, tight tripping out in permafrost in top 9.5m. Pick up core barrel, RIH with tight spots in top 6 singles. Cut Core #1 (59.44-60.96m) in 2 min, POOH and recover core, 1.52m recovered. RIH and cut Core #2 (60.96-62.48m) in 2 min, POOH and recover core, 1.45m recovered. Rig down pumps and lines for the night.

03-13: Warm up rig and pump and prepare to drill, drill out ice, pick up core barrel and RIH, cut Core #3 (62.48-64.01m), POOH, no core in core barrel, core catcher and barrel appear to be okay. RIH and cut Core #4 (63.09-64.62m), core barrel full at 64.62m so we must have picked up 0.91m of Core #3. POOH and recover 1.52m of core. RIH and cut Core #5 (64.62-65.53m), stopped at 65.53m to get back on 1.52m lengths to match drill pipe, POOH, no recovery, core catcher missing most teeth. Replace core catcher and RIH for Core #6 (65.53-67.06m), POOH and recover 1.14m. RIH and cut Core #7 (67.06-68.58m), POOH and recovered 1.52m core. RIH for Core #8 (68.58-70.10m), POOH, recover 1.37m. Rig down and drain pump for the night.

03-14: Warm up rig and prepare to drill, drill out ice and caved hole to 50.29m where pipe started to go in without resistance, POOH, pick up core barrel, RIH, reaming in last 2 singles. Cut Core #9 (70.10-71.63m), POOH and recover 1.07m core. RIH and cut Core #10 (71.63-73.15m), POOH, plastic sleeve very difficult to remove from barrel, recover 1.52m core. RIH, circulate halfway in, rig lines frozen at bottom when ready to core, drain pump, pull drillpipe out of hole immediately to prevent freezing in hole, begin to break apart and thaw out rig lines until end of shift.

03-15: Thaw out rig lines, reassemble lines and hoses, drill out ice and caved in hole with air, control drill ahead, stopping every 0.76m to examine sample, POOH to core at 77.72m. Pick up core barrel and RIH, cut Core #11 (77.72-79.25m), attempt to POOH, packed off above core barrel, work out one single, hook up kelly and rotate, pump air, work two very tight singles out, pump air, work two tight singles out until free, POOH and recover 1.02m core. Decision made to call 79.25m total depth. Place plastic plug and sawdust sack 10m down hole, fill hole with Class "G" cement from 10m to surface, release rig at 18:30h.

APPENDIX 2

SAMPLE AND CORE DESCRIPTION

SAMPLE DESCRIPTIONS

0-4.57m: PERMAFROST: brown, very silty, very fine quartz grains, mica, calcareous

4.57-9.14m: SILTSTONE: permafrost? brownish grey, loose grains, very fine quartz grains common, increasing mica, dark grey grains, black carbonaceous flakes, trace pyrite, calcarous

9.14-13.72m: SILTSTONE: as above
SANDSTONE, coarse to very coarse grains, loose, clear and orange stained quartz, black argillite and chert, feldspar, trace light grey limestone, subangular, moderate sorting, unconsolidated

13.72-18.29m: SANDSTONE: loose, coarse to very coarse with few pebbles, 50% dark grains, black chert and very dark brownish grey argillite, clear and orange quartz, feldspar, fine grained granite, minor very fine grained sandstone, trace limestone, no recovered cement, no stain or cut
CLAY: brownish grey

CLAY APPEARS TO BEGIN AT 17.37m FROM DRILLING CHARACTERISTICS.

18.29-22.86m: CLAY: brownish, slightly silty, calcareous, breaks up rapidly in water from swelling clays

22.86-27.43m: CLAY: silty, very slightly sandy, very fine quartz grains, swells rapidly in water, calcareous

27.43-32.00m: CLAY, silty, mica flakes

32.00-36.58m: CLAY: as above, silty, trace sandy, calcareous, bentonitic

36.58-41.15m: CLAY: silty, slightly sandy

41.15-45.72m: CLAY: increasing silty, slightly sandy, very fine quartz grains, calcareous, bentonitic, breaks up rapidly in water

45.72-50.29m: CLAY: as above

50.29-54.86m: CLAY: brownish, becoming very silty, slight very fine grained quartz, mica, calcareous, bentonitic

54.86-59.44m: CLAY, silty, begin fine to medium sand grains, quartz, dark chert, mica, calcareous, bentonitic, no stain or cut

It is difficult to determine if the sample caught at surface is representative because the thick section of clay keeps balling up on the drill pipe and circulating out with the sample in lumps. It was decided to core from appearance of fine to medium quartz grains for the first time and the drilling characteristics changed from balling and skidding in clay to cutting and grinding.

59.44-73.15m: SEE CORE DESCRIPTIONS #1 to #10

SAMPLE DESCRIPTIONS (continued)

73.15-73.91m: SILTSTONE: very argillaceous, sticky, possibly silty mudstone, slightly micromicaceous and carbonaceous specked, slight very fine quartz sand, coarse to very coarse grains and pebbles may be cavings

73.91-74.68m: SILTSTONE: very argillaceous, very sandy, very fine to fine quartz, coarse to very coarse grains are probably cavings

74.68-75.44m: SHALE: medium grey, slightly silty, trace pyritic, trace bentonitic, platy

75.44-76.20m: SHALE: medium grey, slightly silty, carbonaceous specks, trace sandy, trace pyrite, with argillaceous siltstone laminae

76.20-76.96m: SHALE: as above, slightly silty, slightly bentonitic

76.96-77.72m: SHALE: as above, platy

CORE DESCRIPTIONS

Plastic sleeve coring, cut and examined every 0.75m (2.5')

CORE #1
INTERVAL: 59.44-60.96m
CUT: 1.52m
RECOVERED: 1.52m (100%)

59.44m: SANDSTONE: brown, very fine grained to barely fine grained, predominantly clear quartz, 5% black and dark grey grains, chert and argillite?, minor green chloritized mafics, trace rusty granitic grains, slightly argillaceous, calcareous, falls apart in water or acid, very poorly cemented, very soft, subangular, well sorted, fair to possibly good porosity and permeability, no stain or cut

60.20m: SILTSTONE: brownish, clear quartz, slightly sandy, barely very fine grained, slight dark carbonaceous specks, minor orange grains and mica, slightly argillaceous, calcareous, falls apart in water or acid, very soft, feels like gritty clay, subangular to subrounded, well sorted, fair very fine porosity and permeability

60.96m: SANDSTONE: generally as above, very fine grained, with fine grains, subangular, well sorted, quartz, with black grains, orange stained grains, mica, slightly argilaceous, calcareous, falls apart in water or acid, fair very fine porosity and permeability, no stain or cut

CORE #2
INTEVAL: 60.96-62.48m
CUT: 1.52m
RECOVERED: 1.45m (95%)

60.96m: SANDSTONE: as above

61.72m: SANDSTONE: very fine grained, silty, clear quartz, dark brown and black carbonaceous material and coal flakes very common, increasing orange stained quartz and soft orange of clay?, mica flakes, brownish shale grains, slightly argillaceous, calcareous, falls apart in acid or water, well sorted, subangular, very soft, fair very fine porosity and permeability, no stain or cut

62.48m: SANDSTONE: brown, becoming coarser, very fine grained with some grains barely fine grained, silty, quartz, decreasing coal and carbonaceous material, some dark argillite and chert grains, decreasing orange stain grains, mica, slightly argillaceous, calcareous, porosity difficult to interpret in all these samples as the chips slowly fall apart from the reaction of water and clay in the sandstone as the sample warms up, probably fair very fine porosity and permeability, no stain or cut

CORE DESCRIPTIONS (continued)

CORE #3
INTERVAL: 62.48-64.01m
CUT: 1.52m
RECOVERED: 0.0 m (0%)

CORE #4
INTERVAL: 63.09-64.62m
CUT: 1.52m
RECOVERED: 1.52m (100%)

63.09m: SANDSTONE: brown, very fine grained with some barely fine grains, predominantly quartz, dark chert and/or argillite, mica, rusty orange stained grains, green chloritic grains, slightly silty, slightly argillaceous, calcareous, breaks apart rapidly in water or acid, softens and falls apart slowly at room temperature also, trace pinpoint very weak cut, fair very fine porosity

63.86m: SANDSTONE: very fine to barely fine grained, quartz, brownish shale, argillaceous/carbonaceous material, black chert/argillite, subangular, moderate sorting, silty, slightly argillaceous, calcareous, very soft and falls apart as above, fair porosity and permeability, trace isolated cut from carbonaceous material

64.62m: SANDSTONE: very fine to barely fine grained, quartz increasing chloritized mica, dark carbonaceous/argillaceous material, slightly argillaceous, calcareous, trace isolated pinpoint very weak cut, soft, fair very fine porosity. With laminae to 13 mm of brown, argillaceous, sandy siltstone, increase calcareous cement, tight, firm

CORE #5
INTERVAL: 64.62-65.53m
CUT: 0.91m
RECOVERED: 0 m (0%)

CORE #6
INTERVAL: 65.53-67.06m
CUT: 1.52m
RECOVERED: 1.14m (75%)

65.53m: SANDSTONE, very fine grained, brown, predominantly quartz, increasing brown-black carbonaceous grains, black coal fragments, mica, increasing soft orange clay, slightly argillaceous, calcareous, falls apart in acid or water, predominantly loose grains, soft, trace brown dead organic material cementing quartz grains, trace isolated pinpoint weak cut, fair very fine porosity

66.14m: SILTSTONE, very argillaceous, grading to silty mudstone, sandy, quartz and dark grains, carbonaceous specks, slightly calcareous, rare specks with cut, tight

CORE DESCRIPTIONS (continued)

CORE #6 (continued)

66.68m: MUDSTONE, brown, very silty, grading to very argillaceous siltstone, sandy, sticky, does not fall apart in water, tight, no stain or cut

Lost 0.38m core off bottom, most of recovered core was found sticking out the bottom when the barrel came out of the ground. These cores often come out washed or worn undersize and the core catchers have difficulty holding it.

CORE #7
INTERVAL: 67.06-68.58m
CUT: 1.52m
RECOVERED: 1.52m (100%)

67.06m: SILTSTONE: very argillaceous, sandy, grading to silty and sandy mudstone, soft, sticky, tight

67.67m: SILTSTONE: decreasing argillaceous, calcareous, quartz, dark grains, carbonaceous specks, trace coal flakes, trace pyrite, tight, no stain, trace isolated very weak pinpoint cut

68.28m: MUDSTONE: silty to very silty, slightly sandy, soft, laminated with very argillaceous, sandy siltstone, tight, no stain or cut

68.58m: SANDSTONE: brown, very fine grained, silty, quartz, mica, minor orange stained grains and green grains, streaks with black and brown carbonaceous and dead organic material, fine coal fragments, slightly argillaceous, calcareous, subangular, moderate sorting, poor very fine porosity and permeability, trace isolated pinpoint cut from carbonaceous/dead organic specks

CORE #8
INTERVAL: 68.58-70.10m
CUT: 1.52m
RECOVERED: 1.37m (90%)

68.58m: SANDSTONE: as above, very fine grained, trace cut from carbonaceous specks, with laminae to 13mm of silty and sandy mudstone

69.34m: SANDSTONE: brown, very fine grained, silty, slightly argillaceous, calcareous, quartz, dark carbonaceous/argillaceous specks, trace brown dead organic material, mica, minor rusty orange stained grains, soft, falls apart in water or acid, fair very fine porosity and permeability, trace isolated pinpoint cut from carbonaceous specks

70.10m: SILTSTONE, very argillaceous, sandy, very fine quartz, begin trace floating medium to coarse quartz, calcareous, tight. With laminae grading to silty and sandy mudstone

CORE DESCRIPTIONS (continued)

CORE #9
INTERVAL: 70.10-71.63m
CUT: 1.52m
RECOVERED: 1.07m (70%)

70.10m: SILTSTONE: very argillaceous, sandy, as above

70.71m: SILTSTONE: brown, very argillaceous, sandy, very fine quartz, trace carbonaceous specks, tight, no stain, no cut

71.17m: SILTSTONE: very argillaceous, grading to very silty mudstone, slightly calcareous, sticky, does not break apart in water

CORE #10
INTERVAL: 71.63-73.15m
CUT: 1.52m
RECOVERED: 1.52m (100%)

71.63m: SILTSTONE: brown, very argillaceous, possibly very silty mudstone, slightly calcareous, quartz, mica, trace carbonaceous specks, no stain or cut

72.24m: MUDSTONE: very silty, as above, sticky, trace very fine quartz grains

72.54m: SILTSTONE: very argillaceous, very fine quartz grains, occasional floating medium quartz, argillite and chert grains, tight, no stain or cut

73.15m: SILTSTONE: very argillaceous, slightly calcareous, sandy, very fine quartz grains, trace coarse argillite grains, trace pyrite, tight, no stain or cut

CORE #11
INTERVAL: 77.72-79.25m
CUT: 1.52m
RECOVERED: 1.02m (67%)

77.72m: SHALE: medium grey, very slightly silty, pyrite blebs, trace carbonaceous specks. Shale is packed in with silty mud. It is interpreted that the rock was broken during coring and packed in with ground up mudstone.

78.33m: SHALE: as above, grey, very slightly silty, shale chips in silty mud in barrel

78.64m: SHALE: grey, slightly silty, pyrite blebs, firm, platy. Shale chips in mudstone packed in barrel.

Lost 0.51m off bottom.