ENCANA™

June 30, 2006

Alberta Department of Energy
Oil Development Business Development
9th Floor, Petroleum Plaza, North Tower
9945 – 108 Street
Edmonton, AB T5K 2G6

Attention: Philip Shum Director, Business Development

Re: Innovative Energy Technologies Program
Approval No. 01-002 / Annual report for 2005
Vapor Extraction Recovery (Vapex) at the Suffield Upper Mannville A Pool

Attached is EnCana's 2005 annual report for the Vapex project at the Suffield Upper Mannville A Pool. Should you require further explanation or more information please do not hesitate to contact the undersigned at (403) 645-5046 or Eric Geppert at 645-5024.

Yours truly,

Ron Schramm

Development Engineer
Medicine Hat Business Unit
EnCana

Attachments

Innovative Energy Technologies Program
Approval No. 01-002 / Annual report for 2005
Vapor Extraction Recovery (Vapex) at the Suffield Upper Mannville A Pool

1. Summary

In 2005, the Vapex project at the Suffield Upper Mannville A Pool consisted mainly of compositional simulations of the proposed pilot area and simulations of the previous field pilot in the Upper Mannville N pool (2004-2005). In addition, a Vapex workshop was held between EnCana staff and Igor Mokrys, the co-inventor of the Vapex process, on July 13, 2005. A key learning from the workshop was the use of well triads situated near the oil water contact to improve solvent spreading.

Field implementation of the Vapex pilot has been deferred to the first half of 2007. EnCana is still intent on piloting new EOR processes, including Vapex, as evidenced by our plan to commence an ASP pilot in the Suffield Upper Mannville UU Pool in Q4 2006. It should be noted that planning and scheduling new wells and facility installations in Suffield has become arduous in the past year due to new guidelines and processes set up the Military.

As solvent injection was not underway in 2005, there will be no report of incremental reserves, production, pilot economics, facilities, environmental compliance and future operating plan as per the template. The proposed pilot area has not changed from the original submission and the solvent injection facilities used for the previous pilot will eventually be moved to the Upper Mannville A pool. The focus of this progress report will be on the reservoir simulations undertaken.

2. Pilot Data

The Vapex process consists of injecting a hydrocarbon based solvent at dewpoint at the current reservoir conditions of 7 MPa and 33 degrees C. The solvent consists of 30% propane and 70% methane and is injected in the gaseous phase to induce spreading. Propane dissolves in the oil phase and reduces the heavy oil viscosity by more than a factor of 10.

The Upper Mannville A Pool is currently under bottom water drive and has been developed with horizontal wells that are drilled 1.0 to 1.5 meters below the G/O contact or structure top. A small gas cap covers part of the proposed pilot area which has an oil column, varying from 8 to 13 meters thick, underlain by a large regional aquifer. In this area of the pool, the legs of the horizontal wells are at 50 m spacing. Primary production from the year 2000 to the present has resulted in water crests forming under the horizontal wells, leaving bypassed oil between the crests. This bypassed oil, plus the residual oil in the water crests, is the target of the Vapex pilot.

A fully compositional 2-D cross sectional model was built by the Computer Modelling Group (CMG) in Calgary with input from EnCana staff. The purpose of the model was to investigate solvent spreading and solvent efficiency (incremental oil per unit of solvent). The CMG model and software was transferred to EnCana in late 2005 so that sensitivities could be run in-house.

Numerous cases were modeled and reviewed in 2005 as outlined below.

1) **Varying well configurations** were modeled with injectors either high or low in the oil column while still using existing wellbores. Predictive runs were also made with solvent

injection into the original gas cap and into the original water leg. Producer location was also varied so that adequate spreading could occur.

2) **Changing solvent composition** from 30% propane/70% methane (dew point solvent) to 70% propane/30% methane to 100% propane and 100% methane was also investigated. As expected the dew point gas gave the best results.
3) **Well triads** (2 injectors surrounding a middle producer) drilled at different depths were also modeled. The purpose of the middle producer is to promote solvent spreading so that more oil is contacted. The triads were either 100 to 200 meter spacing (from injector-to-injector).
4) **Gas relative permeability** changes and varying critical gas saturation (Sgc= 0.20 and Sgc=0.05) commenced in 2005. Preliminary indication is that incremental recovery can be reduced in half by early solvent breakthrough from increased gas mobility. This work, which is technically challenging, continued on in 2006 and will be part of that annual report.

Predictive runs ongoing in 2006 are focused on solvent injection rates and duration in order to optimize solvent efficiency (incremental oil per unit of solvent).

Shown below is a list of attachments that should help to explain the simulation model mechanics and results from 2005.

Table 1	Vapex Simulation Summary for 2005
Figure 1	Compositional Analysis for 6 Component System
Figure 2	Case 9N(a) Production & Injection Plot
Figure 3	Case 9N(a) Incremental Recovery by Well
Figure 4	Case 9N(a) X-section of Initial Oil Saturation
Figure 5	Case 9N(a) X-section of Oil Saturation at end of History Match
Figure 6	Case 9N(a) X-Section of Oil Saturation at Project End
Figure 7	Case 9N(a) X-Section of Gas Saturation during Solvent Injection
Figure 8	Case 9N(a) X-Section of Oil Viscosity during Solvent Injection
Figure 9	Net Pay Map showing Simulation Model Area & Preliminary Vapex Wells

Ron Schramm
EnCana
June 30, 2006

Attachments

TABLE 1

Suffield Upper Mannville A Pool - Vapex Simulation Summary for 2005

OOIP=	980.3 e3 m3	or 6.17 MMbbl
OGIP=	35 e6 m3 (soln+gas cap)	or 2.24 BCF
Gas Cap=	9 e6 m3	or 0.32 BCF

Solvent = 30% propane/70% methane
Swc = 0.30 (connate water saturation)
Sorw = 0.30 (residual oil saturation to water)
Sgc = 0.20 (critcal gas saturation)

Actual production at end of history match at 2005-02-28 (2005-03-01)

Cumulative oil =	129.5 e3 m3	or 0.81 MMbbl
Cumulative water =	489.6 e3 m3	or 3.08 MMbbl
Cumulative gas =	21.54 e6 m3	or 0.76 BCF

Case	Description	Injection Well location	Production Well location	Cum Oil e3 m3	Recovery Factor	Increm. Oil Mbbls	Injection Rate per well (leg) MMscf/d	Total Solvent Injected BCF	Incremental Oil divided by Solvent injection bbl/MMscf
	History Match		1.0 to 1.5 m below G/O contact or structure top	130.4	13.3% ← 0.7% difference from actual	0		0	
0	Base Case run-out (23% OOIP)	None	1.0 to 1.5 m below G/O contact or structure top	228.1	23.3%	0		0	
1	11 New Producers 3m above O/W	11 original producers become injectors	3m above O/W offset from injectors	331.7	33.8%	652	0.5	8.0	81
2	inject low produce low	1 injector 2 m above above O/W contact	existing producers & 2 new producers 3 m above O/W	235.9	24.1%	49	2.0	3.0	16
3	inject high produce high	4 producers converted to injection	remaining producers	220.2	22.5%	-50	0.5	3.0	-17
4	inject low produce high	2 injectors 2 m above O/W contact	existing producers	274.1	28.0%	289	1.0	3.0	96
5	inject low produce high	2 injectors 5 m below O/W contact	existing producers	279.5	28.5%	323	1.0	3.0	108
6	inject high produce low	1 injector in gas cap	5 new producers 3m above O/W	255.5	26.1%	172	2.0	3.0	57
9D (a)	200 m triad	2 injectors 1 m below O/W	existing producers & 1 new producer between injectors	234.7	23.9%	42	1.0	3.0	14
9D (b)	200 m triad	2 injectors 4 m above O/W	existing producers & 1 new producer between injectors	278.6	28.4%	318	0.5	1.5	212
9D (c)	200 m triad	2 injectors 4 m above O/W	existing producers & 1 new producer between injectors	254.1	25.9%	164	1.0	3.0	55
9D (e)	200 m triad	2 injectors 4 m above O/W	existing producers & 1 new producer between injectors	235.3	24.0%	45	0.5	1.5	30
9F	200 m triad	2 injectors 2 m above O/W	existing producers & 1 new producer between injectors	236.8	24.2%	55	1.0	3.0	18
9G	Two 200 m triads	3 injectors 1 m below O/W	existing producers & 2 new producers between injectors	260	26.5%	201	0.7	3.0	67
9H	Three 100 m triads	4 injectors 1 m below O/W	existing producers & 3 new producers between injectors	320	32.6%	578	0.5	3.0	193
9N (a)	100 m triad	2 injectors 4 m above O/W	existing producers & 1 new producer between injectors	282.9	28.9%	345	0.5	1.5	230
9N (b)	200 m triad	2 injectors 6 m above O/W	existing producers & 1 new producer between injectors	257.3	26.2%	184	0.5	1.5	123

FIGURE 1

Vapex - Compositional Analysis

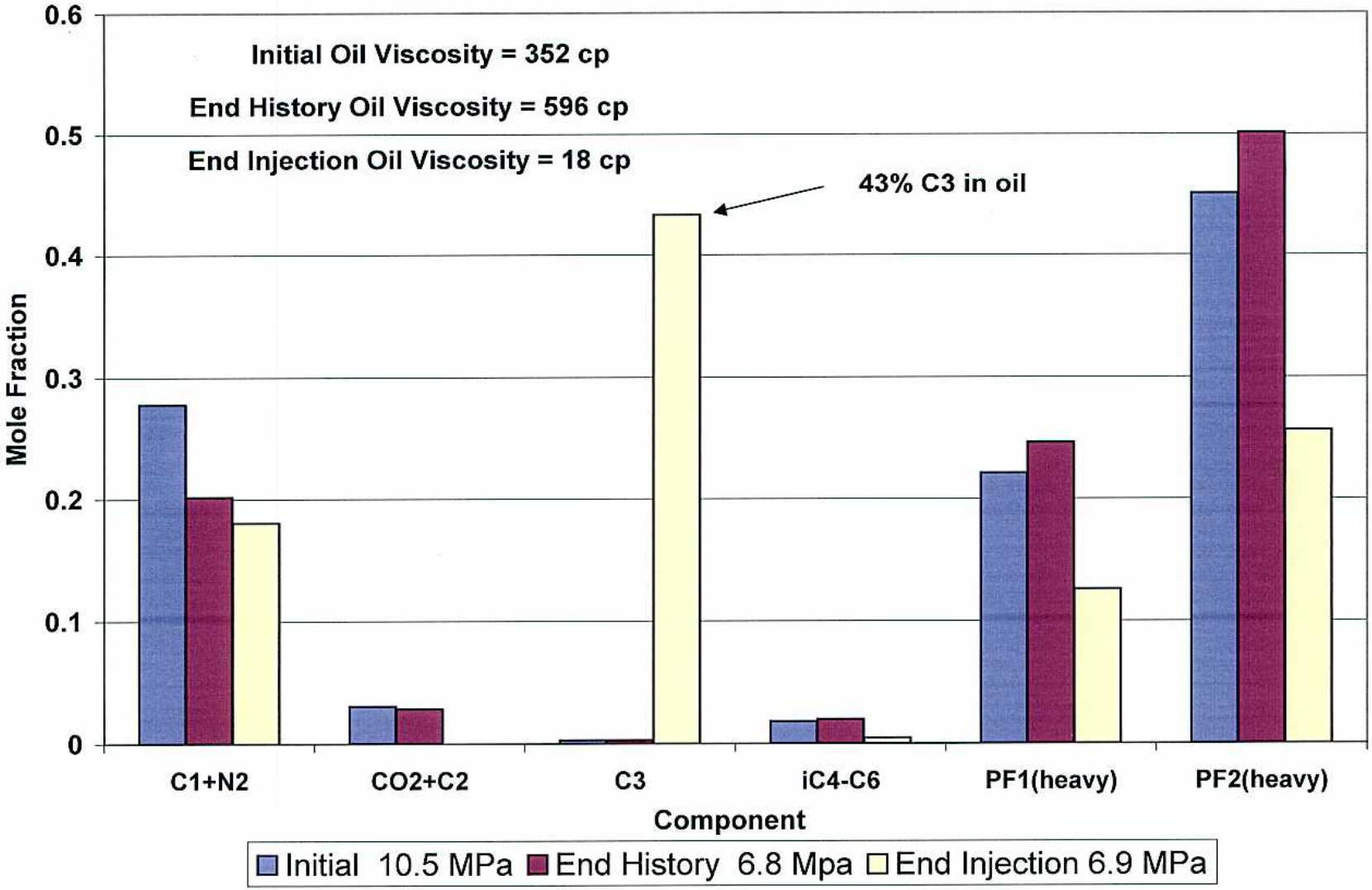


FIGURE 2

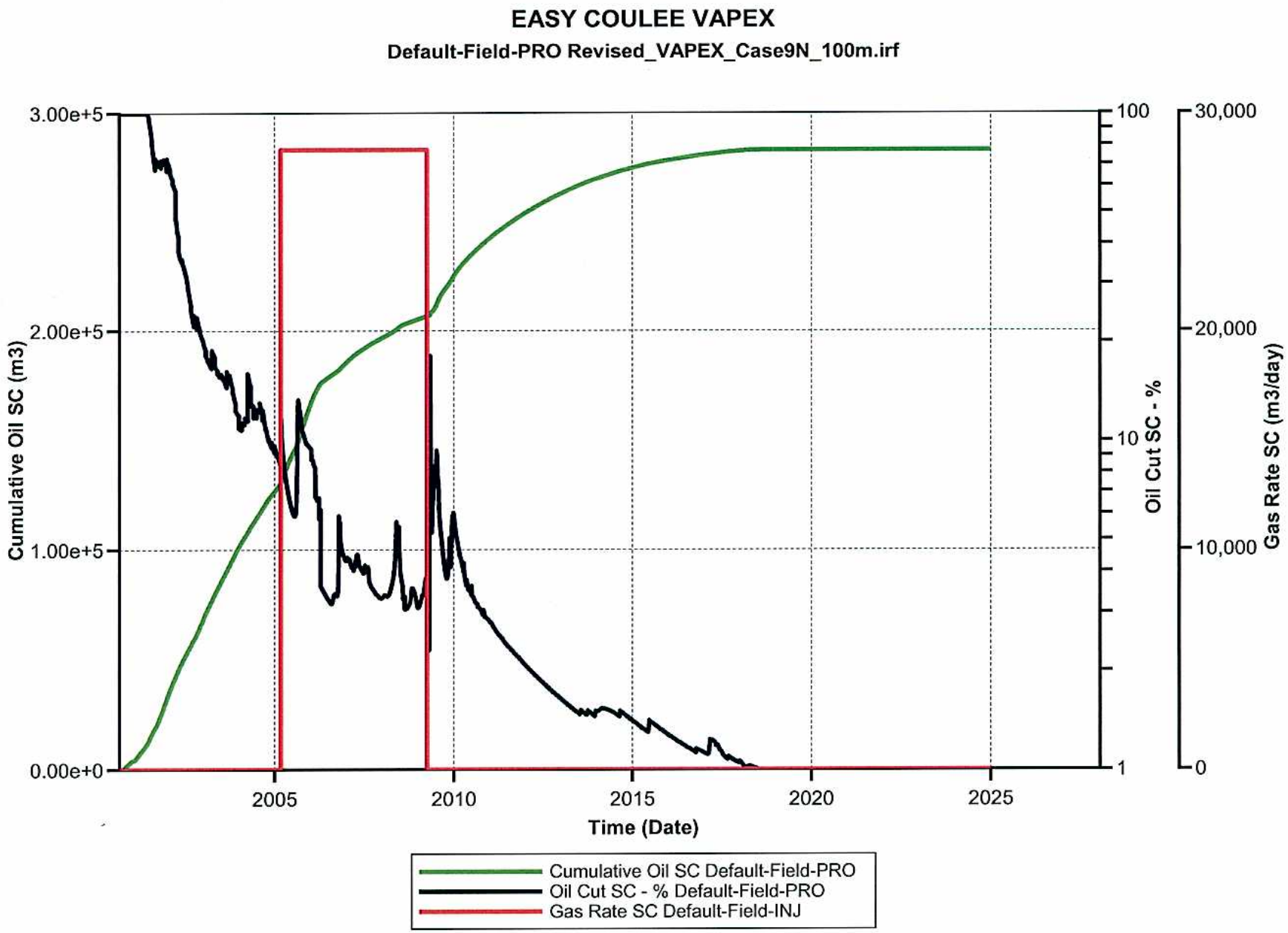
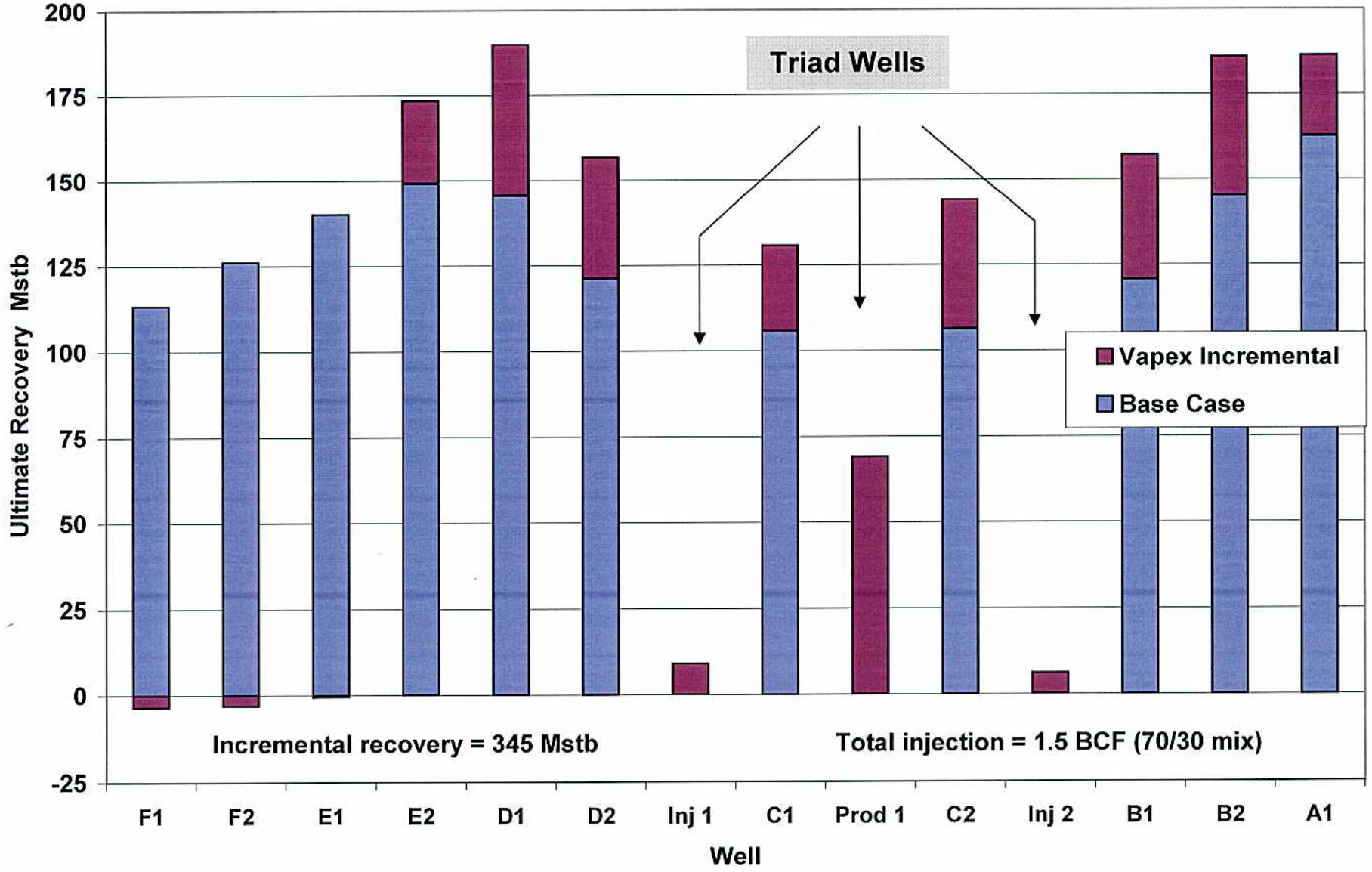

EASY COULEE VAPEX
Default-Field-PRO Revised_VAPEX_Case9N_100m.irf
3.00e+5
2.00e+5
1.00e+5
0.00e+0
Cumulative Oil SC (m3)
100
10
1
Oil Cut SC - %
30,000
20,000
10,000
0
Gas Rate SC (m3/day)
2005
2010
2015
2020
2025
Time (Date)
Cumulative Oil SC Default-Field-PRO
Oil Cut SC - % Default-Field-PRO
Gas Rate SC Default-Field-INJ

FIGURE 3

Vapex Simulation
Injectors 100 m spacing & 4 m above O/W Contact (Case 9N)



RCS 2006-06-29

H:\Vapex Simulation.xls

FIGURE 4

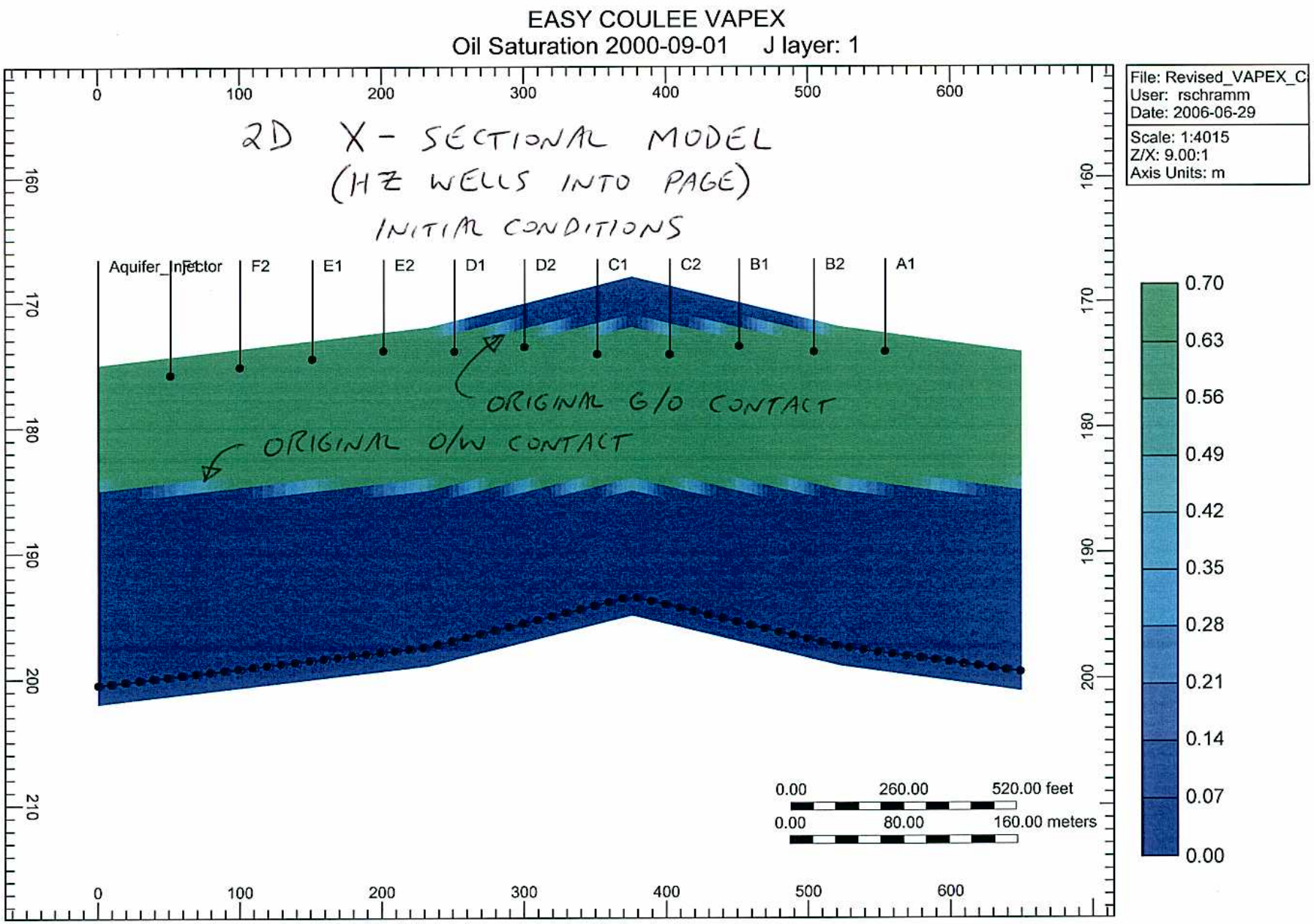

EASY COULEE VAPEX
Oil Saturation 2000-09-01 J layer: 1
2D X-SECTIONAL MODEL
(HZ WELLS INTO PAGE)
INITIAL CONDITIONS
Aquifer_Injector
F2
E1
E2
D1
D2
C1
C2
B1
B2
A1
ORIGINAL G/O CONTACT
ORIGINAL O/W CONTACT
0
100
200
300
400
500
600
160
170
180
190
200
210
0.00
260.00
520.00 feet
0.00
80.00
160.00 meters
File: Revised_VAPEX_C
User: rschramm
Date: 2006-06-29
Scale: 1:4015
Z/X: 9.00:1
Axis Units: m
0.70
0.63
0.56
0.49
0.42
0.35
0.28
0.21
0.14
0.07
0.00

FIGURE 5

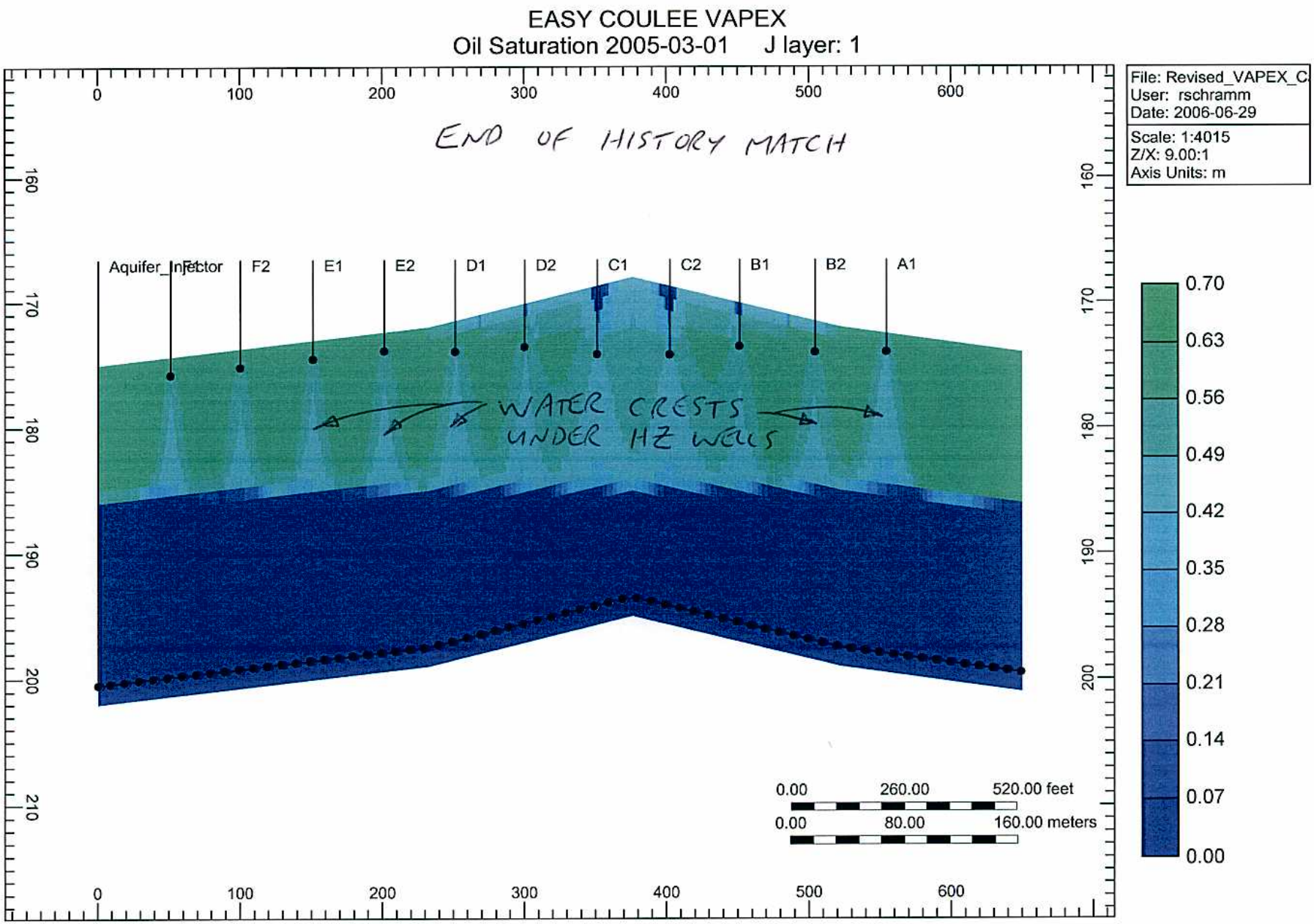

EASY COULEE VAPEX
Oil Saturation 2005-03-01 J layer: 1
File: Revised_VAPEX_C
User: rschramm
Date: 2006-06-29
Scale: 1:4015
Z/X: 9.00:1
Axis Units: m
END OF HISTORY MATCH
Aquifer_Injector
F2
E1
E2
D1
D2
C1
C2
B1
B2
A1
WATER CRESTS UNDER HZ WELLS
0.00 260.00 520.00 feet
0.00 80.00 160.00 meters
0.70
0.63
0.56
0.49
0.42
0.35
0.28
0.21
0.14
0.07
0.00

FIGURE 6

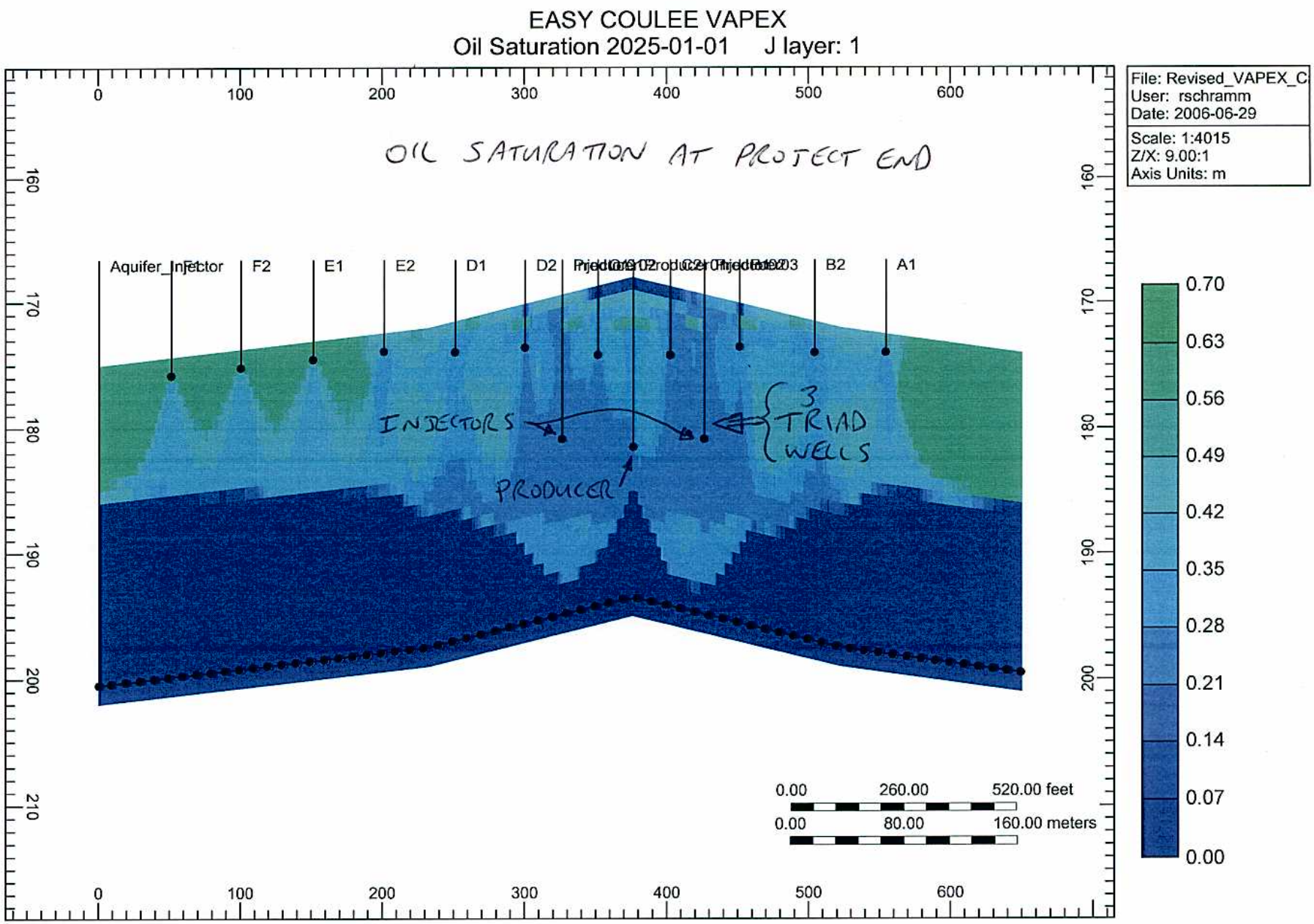

EASY COULEE VAPEX
Oil Saturation 2025-01-01 J layer: 1
OIL SATURATION AT PROJECT END
File: Revised_VAPEX_C
User: rschramm
Date: 2006-06-29
Scale: 1:4015
Z/X: 9.00:1
Axis Units: m
Aquifer_Injector
F2
E1
E2
D1
D2
B2
A1
INJECTORS
3 TRIAD WELLS
PRODUCER
0.00 260.00 520.00 feet
0.00 80.00 160.00 meters
0.70
0.63
0.56
0.49
0.42
0.35
0.28
0.21
0.14
0.07
0.00

FIGURE 7

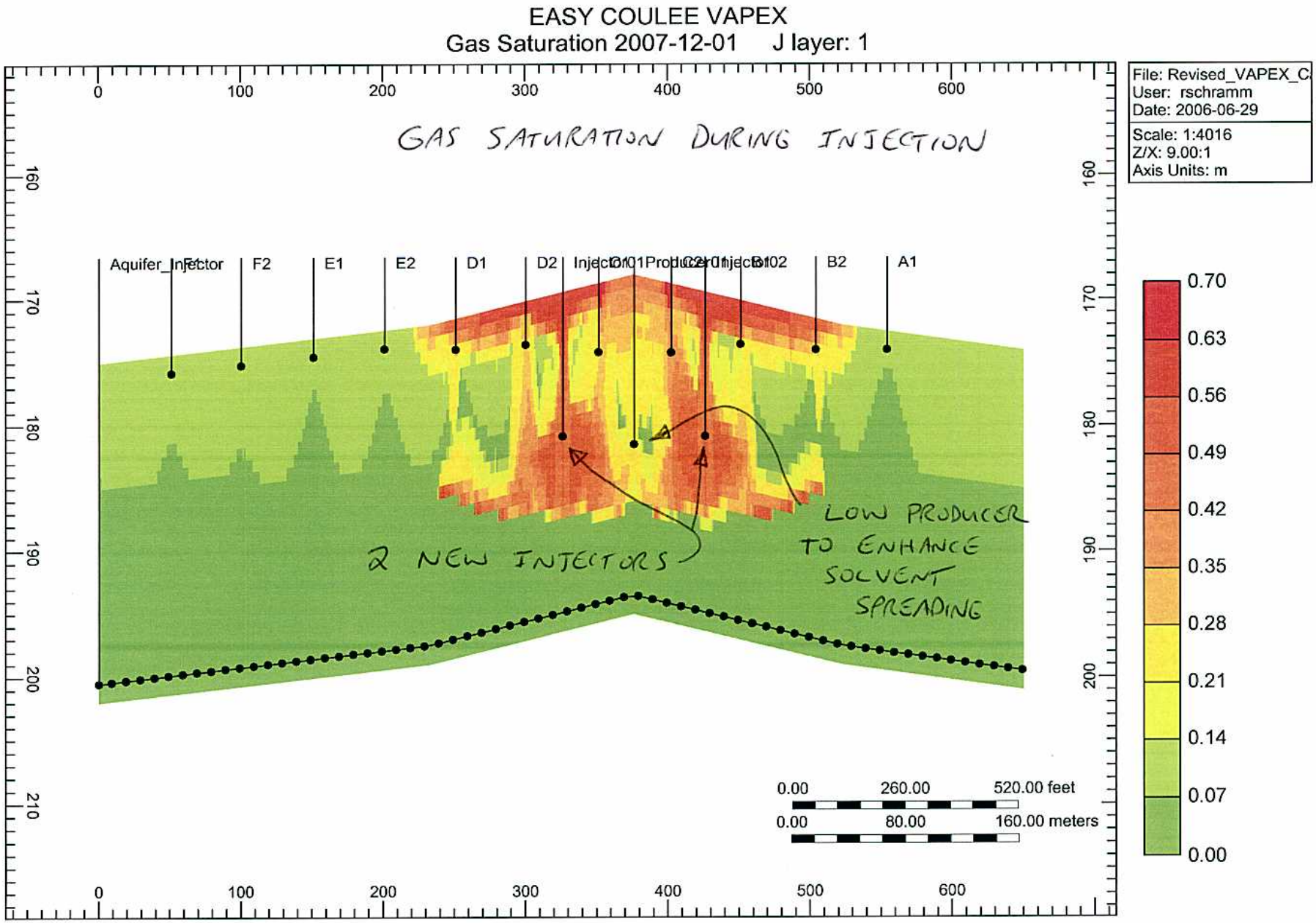
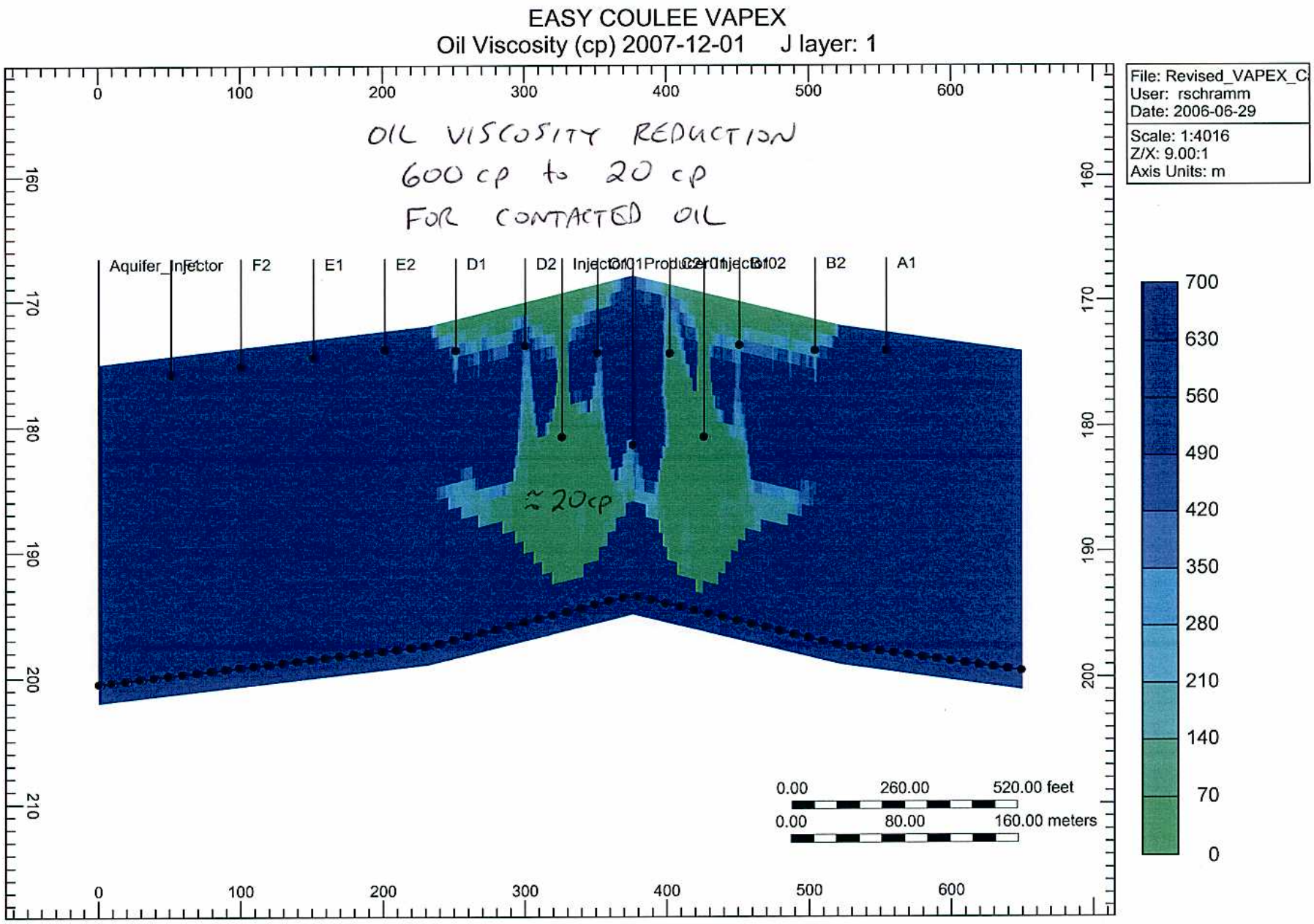
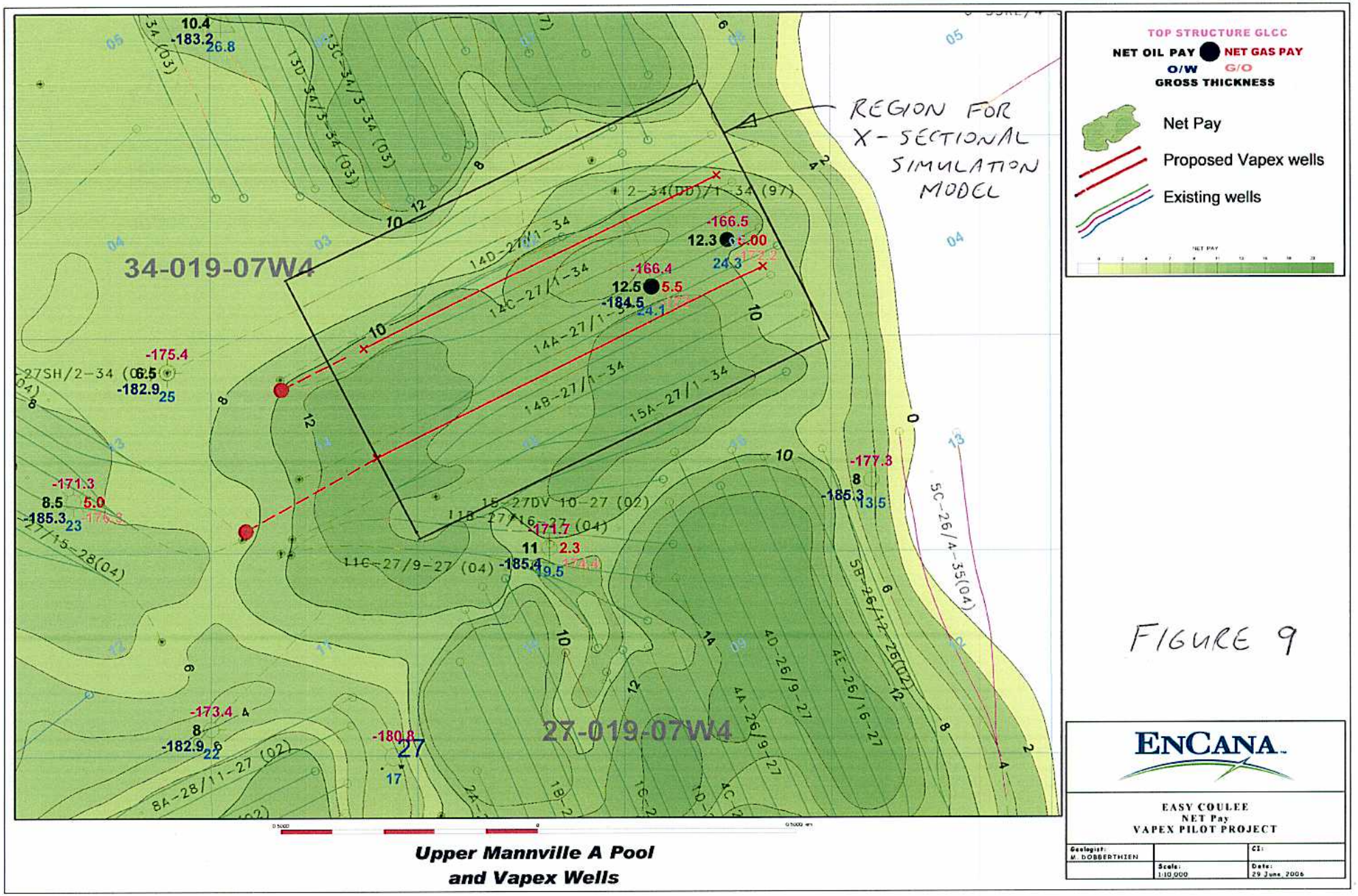

EASY COULEE VAPEX
Gas Saturation 2007-12-01 J layer: 1
GAS SATURATION DURING INJECTION
File: Revised_VAPEX_C
User: rschramm
Date: 2006-06-29
Scale: 1:4016
Z/X: 9.00:1
Axis Units: m
Aquifer_Injector
F1
F2
E1
E2
D1
D2
Injector01
Producer01
Injector02
B1
B2
A1
2 NEW INJECTORS
LOW PRODUCER TO ENHANCE SOLVENT SPREADING
0.00 260.00 520.00 feet
0.00 80.00 160.00 meters
0.70
0.63
0.56
0.49
0.42
0.35
0.28
0.21
0.14
0.07
0.00

FIGURE 8


EASY COULEE VAPEX
Oil Viscosity (cp) 2007-12-01 J layer: 1
OIL VISCOSITY REDUCTION
600 cp to 20 cp
FOR CONTACTED OIL
Aquifer_Injector
F1
F2
E1
E2
D1
D2
Injector01
Producer01
Injector02
B1
B2
A1
≈ 20cp
0
100
200
300
400
500
600
160
170
180
190
200
210
0.00
260.00
520.00 feet
0.00
80.00
160.00 meters
File: Revised_VAPEX_C
User: rschramm
Date: 2006-06-29
Scale: 1:4016
Z/X: 9.00:1
Axis Units: m
700
630
560
490
420
350
280
210
140
70
0



Upper Mannville A Pool and Vapex Wells

FIGURE 9

ENCANA

EASY COULEE
NET Pay
VAPEX PILOT PROJECT

Geologist: M. DOBBERTHIEN		CI:
	Scale: 1:10,000	Date: 29 June, 2006