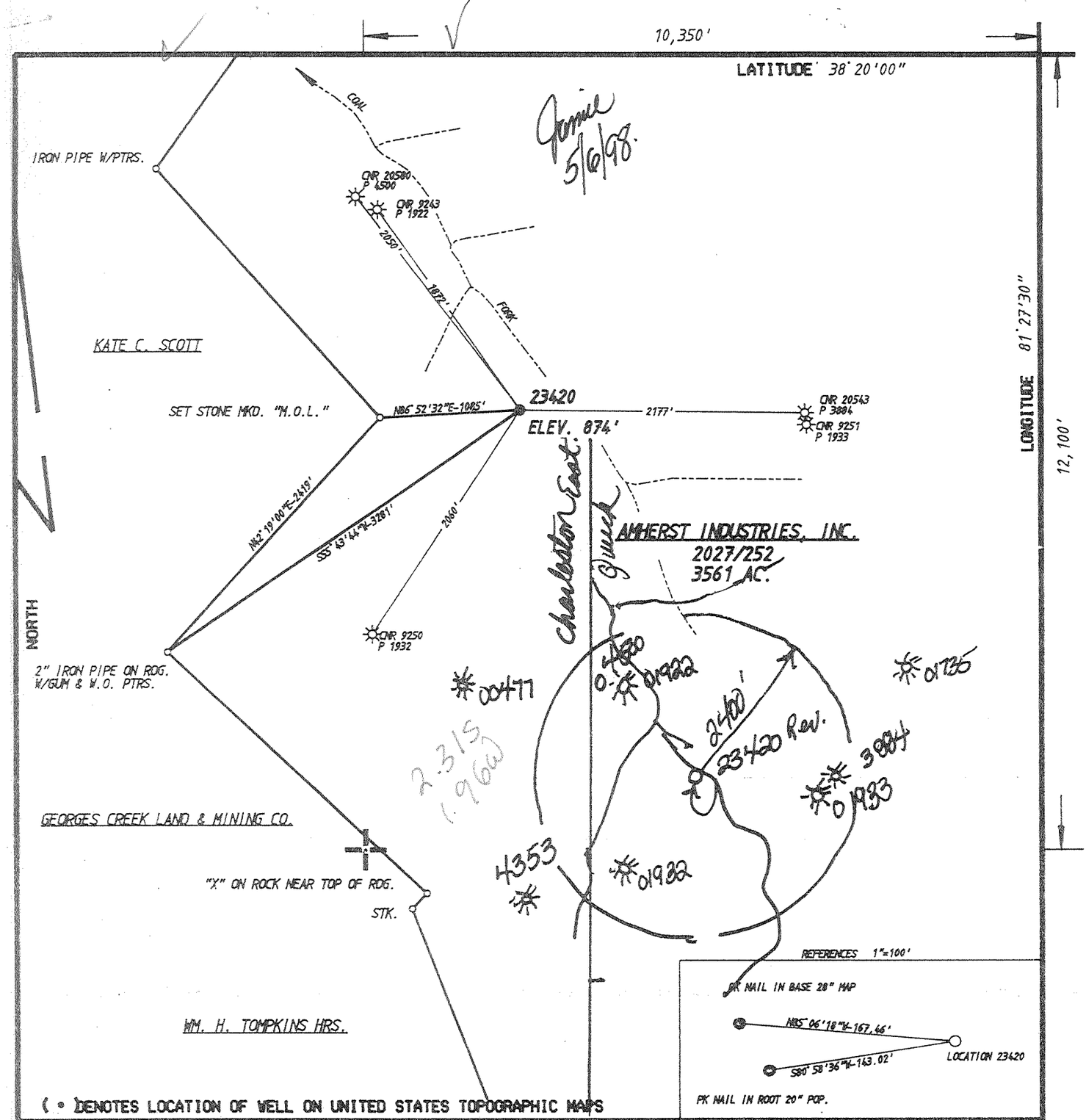

Jamie 5/6/98.

FILE NO. CNR23420.DGN
DRAWING NO. B-14/4
SCALE 1"=1000'
MINIMUM DEGREE OF ACCURACY 1:2500
PROVEN SOURCE OF ELEVATION SPOT ELEV. 1600' SW OF LOC. @ ROAD INTERSECTION ELEV. 900'

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENERGY.

(SIGNED) Dale E. Miller

R.P.E. _____ L.L.S. 647

PLACE SEAL HERE

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE MARCH 30, 1998
OPERATOR'S WELL NO. 23420 REV.
API WELL NO.
47 (STATE) 039 (COUNTY) 05229 (PERMIT)

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS,") PRODUCTION ___ STORAGE ___ DEEP ___ SHALLOW X

LOCATION: ELEVATION 874' WATER SHED COAL FORK OF CAMPBELLS CREEK
DISTRICT MALDEN COUNTY KANAWHA
QUADRANGLE QUICK, WV 7.5'

SURFACE OWNER AMHERST INDUSTRIES, INC. ACREAGE 3561
OIL & GAS ROYALTY OWNER ARK LAND LEASE ACREAGE 5000
LEASE NO. 10001021

PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) 6-6 214

Deep Well

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___

TARGET FORMATION ORISKANY SAND ESTIMATED DEPTH 4926'
WELL OPERATOR COLUMBIA NATURAL RESOURCES, INC. DESIGNATED AGENT W.A. WATSON, JR.
ADDRESS PO BOX 6070, CHARLESTON, WV 35362 ADDRESS SAME

MAY 11 1998

FORM WV-6

KAN COUNTY NAME

5229 PERMIT

WR-35

04-May-98

API # 47- 39-05229

State of West Virginia
Division of Environmental Protection
Section of Oil and Gas

Well Operator's Report of Well Work

Farm name: Amherst Ind. Operator Well No.: 823420

LOCATION: Elevation: 874.00 Quadrangle: QUICK

District: MALDEN County: KANAWHA
Latitude: 12100 Feet South of 38 Deg. 20Min. 0 Sec.
Longitude 10350 Feet West of 81 Deg. 27 Min. 30 Sec.

Company: COLUMBIA NATURAL RESOURCE
P. O. BOX 6070
CHARLESTON, WV 25362-0000

Agent: W. A. WATSON, JR.

Inspector: CARLOS HIVELY
Permit Issued: 05/04/98
Well work Commenced: 6/20/98
Well work Completed: 8/27/98
Verbal Plugging
Permission granted on: _____
Rotary X Cable _____ Rig
Total Depth (feet) 4910
Fresh water depths (ft) _____

Salt water depths (ft) 875

Is coal being mined in area (Y/N)? y
Coal Depths (ft): -

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
11 3/4	416	416	271
8 5/8	1248	1248	342
5 1/2		4896	551
2 3/8		4397	

RECEIVED
OIL & GAS
NOV 25 1998
INSPECTOR

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth (ft) 3606-4398
Gas: Initial open flow - MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow 462 MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests 6 Hours
Static rock Pressure 825 psig (surface pressure) after 72 Hours

Second producing formation Injun/ Big Lime Pay zone depth (ft) 1428-1520'
Gas: Initial open flow 481 (nat) MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests 6 Hours
Static rock Pressure 110 psig (surface pressure) after 72 Hours
*Producing 066 the 5 1/2"X8 5/8" Annulos-Natural

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: COLUMBIA NATURAL RESOURCES, INC.

By: _____

Date: 11/18/98

KAN 5229

NOV 30 1998

Well Completion Data

CNR Well #: 823420
Permit #: 47-39-05229
County: Kanawha
District: Malden
Prospect: Quick
Field: Indian Creek Oriskany

	Top		Base
Salt Sand	740	-	965
Maxon Sand	1030	-	1130
Little Lime	1205	-	1245
Greenbrier Limestone	1265	-	1435
McCrady	1435	-	1445
Big Injun	1445	-	1475
Pocono Shale	1475	-	1885
Berea Sand	1885	-	1889
Cleveland Shale		-	
Upper Devonian	1890	-	3610
Lower Huron Shale	3610	-	3820

	Top		Base
Olentangey Shale	3820	-	4295
Rhinestreet Shale	4295	-	4580
Fifth Sand		-	
Elizabeth Sand		-	
Bradford Sand		-	
Riley Sand		-	
Benson Sand		-	
Onondaga Limestone	4740	-	4820
Oriskany Sand	4846	-	4856
Newburg Sand		-	
McKenzie Dolomite		-	
Tuscarora Sand		-	

Formation @ TD: Oriskany

	Depth	Mcf
Show Gas 1	1310	350
Show Gas 2	1430	350
Show Gas 3		
Show Gas 4		
Show Gas 5		

	Depth
Show Oil 1	
Show Oil 2	

	Depth
Show Water	4315

		H	POR	Sw	Perf Interval
Pay 1	Greenbrier Ls.				1310-1312 1342-1344 1426-1432
Pay 2	Keener Sd.	10	0.23	0.25	1432-1442
Pay 3	Big Injun Sd.	16	0.16	0.3	1462-1472
Pay 4	Oriskany Sd.	8	0.15	0.23	4834-4844
Pay 5					
Pay 6					

Logger TD: 4918
Logging Suite: GR, LDT, CNL, DI, T, A TD to intermediate casing point, GR to surface. Memory PL as needed.
Logging Date: 6/30/98

039 5229

WELL # 823420

PERFORATIONS:

Stage I, Perforations: 32 holes from 4,837 to 4,845 *

Stage 2, Perforations: 20 holes from 4,308 to 4,398

Stage 3, Perforations: 16 holes from 3,606 to 4,137

Stage 4, Perforations: ___ holes from _____ to _____

FRACTURING:

1ST STAGE: ORISKANY *

Perforations from 4,837 - 4,845, Acid 2,000 gal. 28% HCL,
Breakdown @ 3,500 PSI, Avg. Rate 5 BPM,
ATP 2,100 PSI, Total H_2O 46 Bbl., Total sand _____ #
Total N_2 _____ Scf. I.S.I.P. 211 PSI 15 min. VAC.

* ORISKANY WAS WET, SET CIBP @ 4,420' TO ABANDON ORISKANY

2ND STAGE: DEVONIAN SHALE

Perforations from 4,308 - 4,398, Acid 500 gal. 15% HCL,
Breakdown @ 3,462 PSI, Avg. Rate 43 BPM, (FOAM)
ATP 3,446 PSI, Total H_2O 160 Bbl., Total sand 51,000 #
Total N_2 908,700 Scf. I.S.I.P. 3,120 PSI 15 min. 2,491 PSI

3RD STAGE: DEVONIAN SHALE

Perforations from 3606 - 4,137, Acid 500 gal. 15% HCL,
Breakdown @ 2,702 PSI, Avg. Rate 42 BPM, (FOAM)
ATP 2,384 PSI, Total H_2O 137 Bbl., Total sand 41,830 #
Total N_2 751,400 Scf. I.S.I.P. 1,461 PSI 15 min. 1,217 PSI

4TH STAGE: _____

Perforations from _____ - _____, Acid _____ gal. ___ HCL,
Breakdown @ _____ PSI, Avg. Rate _____ BPM,
ATP _____ PSI, Total H_2O _____ Bbl., Total sand _____ #
Total N_2 _____ Scf. I.S.I.P. _____ 15 min. _____

KAN 5229