PROPOSED DALY UNIT NO. 15

APPLICATION FOR ENHANCED OIL RECOVERY WATERFLOOD PROJECT

LODGEPOLE FORMATION

DALY, MANITOBA

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Corex Resources Ltd.

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INTRODUCTION

The Daly portion of the Daly Sinclair Field is situated in Townships 8 to 11 Ranges 27 to 29 W1M and was developed in the 1950's with vertical wells. Technological advances in drilling and completion operations, specifically with respect to horizontal wells, have revived field activity in this area. The proposed unit area offsets Daly Unit No. 1 in which Corex is the licensed operator and sole working interest owner. As referenced above, the first well within the proposed unit, 100/15-10-010-28W1, was drilled in November 1984 and although a poor producer, its results supported the drilling of three (3) additional wells by 1990. Horizontal wells were drilled in Daly Unit No. 3 which prompted the first of a number of horizontals to be drilled in the proposed application area. The first horizontal well drilled in the application area was the 102/12-10-10-28W1 which was drilled in 2010 as an open hole completion in the Crinoidal formation. Unfortunately, the subject well was not economically successful, however, the next horizontal drilled was. Corex drilled the 102/13-09-10-28W1 in January 2014, a fraced Lodgepole well with successful results. Following up on this success Corex drilled two (2) additional horizontal wells which all are within the proposed unit land and has plans to drill a minimum of two (2) more down spaced horizontal wells to complete its full development plan.

Corex, as operator and sole working interest owner, is proposing a unit be created which will include the following lands: Lsd 6 and N½ 9; and Lsd 15 and NW¼ 10, all in Township 10 Range 28W1M and believes the potential exists for incremental production and reserves from an Enhanced Oil Recovery (EOR) waterflood project in the Lodgepole formation. As of July 2017, the proposed application area contains twelve (12) wells which status can be broken down as follows: Five (5) horizontal Lodgepole wells (4 producing, 1 drilled and waiting on completion) and seven (7) vertical wells (3 D&A, 2 produced and now abandoned, and 2 producing). In addition to the Lodgepole wells referenced above, there is one (1) operated Bakken well within the unit area (the Bakken will be unitized in a separate application). We anticipate converting some of the producing Lodgepole horizontal wells into injectors when implementing the EOR waterflood project, however, our plan would be to produce any newly drilled wells for at minimum one (1) year before such conversion. Corex hereby submits an application to establish Daly Unit No. 15 and implement an EOR Waterflood Project within the Lodgepole formation (Figure 1).

The proposed Daly Unit No. 15 falls within the Daly Sinclair Lodgepole Pool (Figure 2).

SUMMARY

1. The proposed Daly Unit No. 15 will include the Lodgepole formation in fourteen (14) legal subdivisions (Lsd's) and twelve (12) wells which status can be broken down as follows: Five (5) horizontal Lodgepole wells (4 producing, 1 drilled and waiting on completion) and seven (7) vertical wells (3 D&A, 2 produced and now abandoned, and 2 producing) (Figure 1).

2. The original oil in place (OOIP) for the proposed Daly Unit No. 15 is calculated as 2.812 $10^6 m^3$ (17.69 MMbbl), for an average of 200.8 $10^3 m^3$ (1,264 Mbbl) per LSD.

3. Cumulative production in the proposed Daly Unit No. 15 to the end of July 2017 is 46.3 10^3m^3 (291.1 Mbbl) of oil. This represents a 1.65% recovery factor of the total OOIP.

4. Production began in November 1984, one vertical well 100/15-10-010-28W1/00, produced poorly for less than a year. However, it was enough to continue exploration and in October 1986, 100/13-09-010-28W1/00 began producing. By 1990, three vertical wells were producing in the unit. In May 2015, with the drilling of hydraulically fractured horizontal wells, the proposed Daly Unit No. 15 reached a peak of 37.5 m^3/d (236 b/d), or an average of 6.3 m^3/d (39 b/d) per well, with a 50% watercut (Figure 3).

5. The Estimated Ultimate Recovery (EUR) of oil on primary production within the proposed Daly Unit No. 15 through the use of type curves and a section model is 111.3 10^3m^3 (700 Mbbl), with 65 10^3m^3 (409 Mbbl) remaining as of July 2017. The Estimated Ultimate Recovery Factor (EURF) on primary production would be 3.96% of the total OOIP within the Lodgepole section.

6. With the implementation of a waterflood within the Middle and Lower Daly members of the Lodgepole formation, incremental reserves of 296.3 10^3m^3 (1,863.6 Mbbl) are expected while the incremental recovery factor is expected to be 10.53% for a total recovery factor of 14.49% for the entire Lodgepole section.

7. The development plan will be to continue producing the existing wells and continue development with the drilling of a minimum of two (2) additional horizontal wells. Further drilling may proceed, depending upon the results of recent drilling. Horizontal wells will be converted into water injectors and the waterflood initiated in late 2018 or early 2019 (Figure 4). This timing is contingent upon the approval of the unitization and EOR waterflood application. All recently drilled horizontal wells in the proposed Daly Unit No. 15 have been completed using multi-stage hydraulic fracturing.

GEOLOGY

Stratigraphy

The Lodgepole formation, in the proposed Daly Unit No. 15 conformably overlies the hydrocarbon-bearing Bakken formation. It was deposited in a gently sloping carbonate ramp setting and has been subdivided by Corex into six laterally continuous, shallowing upwards cycles. In ascending order, the sequence consists of two non-reservoir cycles: the Basal Limestone and the Cromer Shale which are overlain by four reservoir cycles: the Cruikshank Crinoidal, Lower Daly, Middle Daly and Flossie Lake. The Lodgepole formation is unconformably overlain by the red silts and shales of the Lower Amaranth, and the anhydrites and shales of the Upper Amaranth which forms the top seal for the hydrocarbon system. The stratigraphy of the Lodgepole formation is shown on the type well (100/12-9-10-28W1/00) and structural section which runs through

existing vertical well control in and around the proposed unit (see Appendix I). The majority of original 1950's era verticals were cored, so there is ample offsetting core and log data to assist in the ongoing development of the Lodgepole formation.

Fluid Contacts

Over sixty years of production combined with regional mapping done by Corex has indicated that the Lodgepole system oil – water contact is at -290m SS, which is downdip from the proposed Daly Unit No. 15.

Sedimentology

Starting at the base of the Lodgepole section and working upwards, the first cycle immediately overlying the Bakken formation is the Basal Limestone (822-826.5m KB; in the following sections the depths will refer to 12-09-10-28W1 type log in Appendix I). The Basal Limestone is a basinal argillaceous limestone with traces of fossil hash and chert nodules. This unit is not prospective and is capped by an argillaceous marker bed.

The next cycle, the Cromer Shale (779.6-822m KB) is a basinal lime-mud consisting of tan to light brown to maroon-colored, occasionally dolomitic, limestone with minor anhydrite, grey-green shale and very fine quartz siltstone components. The Cromer Shale is non-reservoir and is capped by a light to medium grey shale.

The overlying Cruikshank Crinoidal (772-779.5m KB), is the first reservoir quality cycle deposited within the Lodgepole formation. The Crinoidal is characterized by bioclastic to biofragmental wackestones to grainstones. Abundant crinoid fragments and shallower-water shell debris has been transported downdip in submarine carbonate channels that have incised the underlying Cromer lime muds.

The Crinoidal isopach ranges from 5 to 14m thick within and surrounding the proposed unitized lands. Using a 6% porosity log/core cutoff the average porosity ranges from 7-13% with permeabilities of 1-10mD. Using the same cutoff, the net pays range from 0.9 to 5.8m through and around the proposed Daly Unit No. 15 acreage (Appendix III).

The Lower Daly (761-772m KB) is the next shallowing upwards reservoir cycle and grades from a tan to light brown lime mudstone into grainy bioclastic wackestones to packstones. It is occasionally argillaceous with traces of pyrite and has biofragment rich dolomite. Deposition is in an upslope higher-energy fairway where most of the matrix has been winnowed out, preserving better reservoir both vertically and laterally. The Lower Daly, using a 6% core/log cutoff, has 7-11% porosity and an Isopach up to 14m with pays ranging from 2.2 - 8.1m and permeabilities from 0.9-7.4mD (Appendices VII and IX). Historical production has been obtained without fracture stimulation, but oil rates and recoveries have been positively impacted by stimulation.

The Middle Daly (752-761m KB) is a tan, partially recrystallized very fine to fine slightly dolomitic biofragmental wackestone that grades to a cryptocrystalline mudstone with minor anhydrite and shale. It has a very distinctive lower resistivity profile as result of higher bound water, yet there have been high oil cuts for decades out of this zone. Deposition of this shallowing upward sequence occurred in a more restricted marine environment than the underlying Lower Daly. The Middle Daly isopach ranges from 9m to 11m in thickness over the proposed unit (Appendix X). Using a 6% cutoff the average porosities range from 8-16% and permeabilities from 0.7-3.7mD with net pays from 2.9-5.8m. (Appendices XI and XIII).

The final reservoir cycle within the Lodgepole is the Flossie Lake (738-752m KB). The base of which is a dolomitic limestone that then grades upward into a thinly interbedded dolomite and anhydrite. This is indicative of deposition in the uppermost shallow evaporitic ramp setting. This interval is a light to medium brown, horizontally laminated, microsucrosic dolomite interbedded with dense, white anhydrite beds. The uppermost 3 to 4m of the Flossie Lake is dominated by anhydrite and contains only minor oil stained dolomite. The Flossie isopach is 9 to 15m in thickness (Appendix XIV); using a 6% core/log cutoff the net pay is 2.6 to 6.5m, permeabilities from 1.3-2.3mD and porosities from 10-15% (Appendices XV and XVII). The juxtaposition of reservoir quality dolomites with ductile anhydrite laminae additionally complicates stimulation of this reservoir interval.

Structure

The structure within the proposed Daly Unit No. 15 area primarily reflects deposition on a carbonate ramp-margin with established regional trends dipping down to the southwest into the Williston basin. (see Appendices XVIII through XXI for structural maps of each reservoir cycle).

Localized salt dissolution has modified this regional trend in certain areas. For example, in section 16-10-28 there is a salt collapse which was infilled during Flossie deposition with ~25m of interlaminated oil stained dolomite and anhydrite. These dissolution events do not appear to represent continuous barriers to lateral fluid flow within the reservoir and they do not appear to interrupt the lateral continuity of the reservoir beds. In carbonate reservoirs, natural fractures will be present in varying degrees and can impact fluid movement within the reservoir cycles.

Reservoir

Maps for each of the four reservoir units were generated using available openhole logs as well as integration of core data. All maps have been derived and documented in the previous sections, with referenced appendices. Porosity and permeability cutoffs are consistent with previous studies and reflect Corex's detailed reservoir evaluation within the T10-R28W1 area.

OIL IN PLACE, PRODUCTION HISTORY AND ESTIMATED RECOVERY

Original Oil in Place

The original-oil-in-place (OOIP) for the proposed Daly Unit No. 15 is 2.812 10^6m^3 (17.69 MMbbl) for the Lodgepole formation. The OOIP was calculated in-house. Values of thickness, porosity and water saturation of each LSD for the various reservoir zones are used to calculate the OOIP on an individual LSD basis. Details of the calculations are summarized in Table 1.

Historical Production

Figure 3 shows the production history of the wells within the proposed Daly Unit No. 15. There are a total of twelve (12) wells, the status as of July 2017 is as follows: Five (5) horizontal Lodgepole wells (4 producing, 1 drilled and waiting on completion) and seven (7) vertical wells (3 D&A, 2 produced and now abandoned, and 2 producing). Within the proposed unit there is currently no water disposal. All of the referenced wells are perforated in the Lodgepole formation.

To the end of July 2017, the proposed Daly Unit No. 15 has produced cumulative volumes of oil of 46.3 10^3m^3 (291.1 Mbbl) and water of 47.8 10^3m^3 (300.4 Mbbl). The current recovery factor is 1.65%.

Production began in November 1984, one vertical well 100/15-10-010-28W1/00, produced poorly for less than a year. However, it was enough to continue exploration, and in October 1986, 100/13-09-010-28W1/00 began producing. By 1990, three vertical wells were producing in the unit. In May 2015, with the drilling of hydraulically fractured horizontal wells, the proposed Daly Unit No. 15 reached a peak of 37.5 m^3/d (236 b/d), or an average of 6.3 m^3/d (39 b/d) per well, with a 50% watercut (Figure 3).

Primary Recovery

Table 3 lists the wells within the proposed unit area, together with the cumulative oil production to the end of January 2017 and the EUR estimated using decline analysis. The total EUR for the proposed Daly Unit No. 15 with further development is 111.3 10^3m^3 (700 Mbbl) for a recovery factor of 3.96% of the total OOIP of the Lodgepole section.

Secondary Recovery

Within the Lodgepole formation, the proposed waterflood will target the Middle and Lower Daly members which contains over 49% of the total OOIP. A section model of the Middle and Lower Daly zones was built to estimate the expected recovery from waterflooding. This section model used average reservoir properties and was tuned to match the type production profile of Corex horizontal producers within the Middle Daly member. With decline analysis and model results Corex expects an EURF of 7.9% under primary depletion. With horizontal wells converted into injectors, the section model yields an ultimate EURF of 29%, or an incremental recovery factor of

21.1%. Note that these recovery factors are based on the OOIP of the Middle and Lower Daly zones only and not the entire Lodgepole formation. Additional information on the section model that was scaled to represent Daly Unit No. 15 is included in Appendix XXII.

UNITIZATION

The basis for unitization is to implement a waterflood to increase the ultimate recovery of the OOIP from the proposed project area.

Unit Name

Corex proposes the name of the new unit shall be Daly Unit No. 15.

Unit Operator

Corex will be the Operator for Daly Unit No. 15.

Unitized Zones

The unitized zone to be waterflooded in the Daly Unit No. 15 will be the Lodgepole formation.

Unit Wells

The twelve (12) wells have statuses that can be broken down as follows: Five (5) horizontal Lodgepole wells (4 producing, 1 drilled and waiting on completion) and seven (7) vertical wells (3 D&A, 2 produced and now abandoned, and 2 producing). All wells within the proposed Daly Unit No. 15 are outlined in Table 2 with their current status.

Unit Lands

Daly Unit No. 15 will consist of fourteen (14) Lsd's which will include Lsd 6 and N½ 9, and Lsd 15 and NW¼ 10, all in Township 10 Range 28W1M. The lands included each tract are outlined in Appendix XXIII.

Tract Factors

The proposed Daly Unit No. 15 will consist of fourteen (14) tracts based on remaining OOIP using maps created internally by Corex per Lsd, as of July 2017, with the production from the horizontal wells being divided according to the existing production allocation agreement. The calculation of the tract factors are outlined in Table 1.

Working Interest Owners

Appendix XXIII outlines the working interest for each recommended tract within the proposed Daly Unit No. 15. Corex will have a 100% WI across all tracts.

WATERFLOOD DEVELOPMENT

The objective of implementing a waterflood is to provide pressure support and improve recovery. The Lodgepole formation is relatively shallow, with undersaturated oil having low solution gas-oil ratios. As such, there is not much drive energy within the system. Corex believes additional energy is required to improve the recovery. Waterflooding will enhance the recovery by providing pressure support as well as displacing the oil from the injectors towards the producers.

Rock and Fluid Properties

Rock and fluid properties for the Lodgepole formation are summarized in Table 4. These properties were estimated using standard correlations in the literature as well as existing oil analysis and PVT data.

Using Corex's internal database on fracture treatments and step rate tests, the fracture gradient for the Lodgepole formation is estimated to range between 19.0 kPa/m and 25.9 kPa/m, with an average of 23.3 kPa/m. The surface fracturing pressure is estimated to range between 6,348 kPa and 11,500 kPa with the average gradient the estimated surface fracturing pressure is 9,500 kPa.

Estimated Recovery

Using the results from the Daly section model, incremental reserves of 296.3 10^3m^3 (1863.6 Mbbl) are expected. Based on the total OOIP for the Lodgepole formation, the incremental recovery factor is expected to be 10.53% for an overall recovery factor of 14.49%.

Economic Limit

The economic limit will be when the net oil rate and net oil price revenue stream becomes less than the current producing operating costs. Based on current price forecasts, the economic limit for the project would be 1 m^3/d.

Source of Injection Water

As the wells in the subject unit are all flowline tied in to the 12-04-10-28 Daly Unit No. 1 battery, source water will come from the new installed waterflood facilities. The source will be Lodgepole produced water from the Daly Unit No. 1 and Daly Unit No. 15 producing wells. If required, a new Lodgepole source well will be drilled near the 12-04 Battery.

A simplified process flow diagram of the battery and injection system to the injectors is located in Figure 7. The injector wells will be equipped with surface injection rate and pressure metering with choke valves to control wellhead pressure and injection rates (Figure 9). The wells will be evaluated for installation of a downhole nozzle system to ensure an even distribution of injection fluid across the horizontal wellbore (representation shown in Figure 6). These nozzles will also act as a choke to ensure the reservoir pressure remains below frac pressure. The water injection pipeline system will be monitored for leak detection using pressure variance and volume balancing. The corrosion control program outlining the planned system design and operational practices to prevent corrosion is located in Figure 9.

Operating Strategy

Corex's plan is to have alternating producer-injector patterns within the proposed Daly Unit No. 15 and the proposed injection scheme can be seen in Figure 4.

Injection rates are expected to be in the range of 30 m^3/d to 80 m^3/d, per well, subject to a maximum injection pressure of 8,500 kPa at the well head. This maximum pressure is based on a fracture pressure of 9,500 kPa and a safety factor of 90%. Initially, injection will target a monthly voidage replacement ratio (VRR) between 1.25 and 1.75. This over-injection will serve to replace the existing voidage within the proposed unit area. Once a cumulative VRR of one is attained, the injection rate will be scaled back to maintain the VRR at one, both on a monthly basis and a cumulative basis.

All producers will be kept at pump-off condition.

Pressure

The initial pressure is estimated to be between 7,800 kPa and 8,100 kPa. This is based on the depth of the Middle Daly zone and a static gradient ranging between 10.5 kPa/m and 10.8 kPa/m. One pressure measurement has been taken within the proposed unit. The pressure was taken March 2014 on the 102/12-10-010-28W1/00 well producing out of the Crinoidal formation; the pressure was low at 2,297 kPa, corrected to the datum. This low pressure is believed to be contained within the Crinoidal zone and due to the depletion of the Crinoidal zone from the offsetting unit production without proper waterflood support. Existing wells in Daly Unit No. 1, when measured in the Crinoidal formation, also show low pressure within the area. However, due to minimal production from the proposed unit thus far in the other formations within the Lodgepole section it is estimated that the pressure is quite close to the estimated reservoir pressure. With significant development plans in the near future it is projected that the pressure will decrease rapidly from primary depletion. With low solution-gas oil, another drive mechanism will need to be implemented in order to improve the recovery within the proposed unit.

Waterflooding will help to re-pressurize and add energy to the reservoir. During the initial over-injection period, the reservoir pressure is expected to increase from the current level. Once the cumulative VRR reaches one, a monthly VRR of one will be maintained. At the stage of the first

conversion the reservoir pressure is expected to be below its initial value. Prior to injection Corex will endeavor to record reservoir pressures within the proposed unit and continue upon implementing a secondary recovery scheme.

Waterflood Facilities

Waterflood facilities are currently being installed at the 12-4-10-28 battery in the fall of 2017, and will be used for this waterflood. The system is designed to handle capacities both in and out of the Daly Unit No. 1. The equipment consists of a FWKO on the inlet stream, water tanks to filter out any large solids or emulsions from the produced water, 2 bag type filter banks to further filter out any solids down to 1 micron, and a new injection pump. No new equipment will be required for this application area, with exception to the injection wellhead tie-ins and flowlines.

Waterflood Surveillance

Waterflood response within the proposed Daly Unit No. 15 will be closely monitored with the following:

- Regular production well testing to monitor fluid rate and water cut to watch for waterflood response
- Comparison of daily injection rates and pressure monitoring to targets
- Monitor monthly and cumulative voidage replacement ratio by pattern and overall unit
- Evaluation of Hall plots
- New injection targets will be sent to the field on a regular basis

Project Schedule

With the success of the recently drilled horizontal wells within the proposed unit, an active development plan will be implemented. Thus far in 2017, one (1) well has been drilled and completed within the proposed unit area and a further two (2) are waiting on completion. Further drilling may occur, contingent upon results of the recently drilled wells. After a period of primary recovery, Corex intends to convert several wells to injection in an alternating producer-injector waterflood scheme to support the other existing wells and implement a waterflood.

Conversion of the horizontal producers into injection wells is expected to start in late 2018 or early 2019. This schedule is contingent upon the approval of the Unitization and Waterflood application, as well as the various stake holders coming to agreement.

NOTIFICATIONS

In accordance with the regulations, Corex will circulate notification to all surface and mineral owners of the proposed EOR project of Daly Unit No. 15. Copies of the notices and proof of service to all affected owners will be forwarded to the Petroleum Branch, when available, to complete the Daly Unit No. 15 Application.

Should you have any comments and/or questions regarding this application, please contact Peter [redacted], Engineering, at (403) 718-6371 or peterp@corexresources.ca or (403) 718-6357 or chrisd@corexresources.ca, respectively.

Regards,

COREX RESOURCES LTD.

[redacted]

Executive Vice President, Land

Table 1 – Summary of Original Oil In Place and Tract Factor Calculations

Daly Unit No. 15
Lodgepole Unit

Tract LSD	Tract Weighting	Total	6-9 06-09-010-28W1	9-9 09-09-010-28W1	10-9 10-09-010-28W1	11-9 11-09-010-28W1	12-9 12-09-010-28W1
Tract Factor		100.000000000%	7.084532358%	7.753320800%	7.517812291%	7.792788992%	9.178795567%
Flossie Lake							
Area (ac)		560	40	40	40	40	40
h (m)			4.5	5.7	5.1	4.2	5.7
Vb (ac-ft)		9,383	591	748	669	551	748
phi			11.5%	11.5%	11.5%	11.5%	11.5%
Sw			25%	25%	25%	25%	25%
HCPV			0.388	0.492	0.440	0.362	0.492
OOIP (Mbbls)		6,278	395	501	448	369	501
OOIP (Mstb)		5,868	369	468	419	345	468
OOIP (10^3m^3)		933	59	74	67	55	74
Middle Daly (Green)							
Area (ac)		560	40.0	40.0	40.0	40.0	40.0
h (m)			4.2	5.1	4.6	3.5	5.8
Vb (ac-ft)		8,373	551	669	604	459	761
phi			10.3%	10.3%	10.3%	10.3%	10.3%
Sw			30%	30%	30%	30%	30%
HCPV		5	0.303	0.368	0.332	0.252	0.418
OOIP (Mbbls)		4,683	308	374	338	257	426
OOIP (Mstb)		4,377	288	350	316	240	398
OOIP (10^3m^3)		696	46	56	50	38	63
Lower Daly (Purple)							
Area (ac)		560	40.0	40.0	40.0	40.0	40.0
h (m)			6.0	4.8	5.2	8.8	8.1
Vb (ac-ft)		9,239	787	630	682	1,155	1,063
phi			9.5%	9.5%	9.5%	9.5%	9.5%
Sw			30%	30%	30%	30%	30%
HCPV		5	0.399	0.319	0.346	0.585	0.539
OOIP (Mbbls)		4,766	406	325	352	596	548
OOIP (Mstb)		4,455	380	304	329	557	513
OOIP (10^3m^3)		708	60	48	52	89	81
Crinoid							
Area (ac)		560	40.0	40.0	40.0	40.0	40.0
h (m)			3.4	4.4	4.7	4.6	5.8
Vb (ac-ft)		6,824	446	577	617	604	761
phi			9.3%	9.3%	9.3%	9.3%	9.3%
Sw			35%	35%	35%	35%	35%
HCPV		3	0.206	0.266	0.284	0.278	0.351
OOIP (Mbbls)		3,200	209	271	289	283	357
OOIP (Mstb)		2,991	196	253	270	265	334
OOIP (10^3m^3)		476	31	40	43	42	53
Total Lodgepole							
Total OOIP (Mstb)		**17,690**	**1,233**	**1,374**	**1,333**	**1,406**	**1,712**
Total OOIP (10^3m^3)		2,812	196	219	212	224	272
Cumulative Oil (Mstb)		**291**	**0.0**	**25.4**	**25.4**	**50.3**	**114.8**
OOIP-Cum Prd (Mstb)	**100%**	**17,399**	**1,233**	**1,349**	**1,308**	**1,356**	**1,597**

Comments: **Cumulative production to July 2017**
Bo **1.07**

Well 1		100/09-09-010-28W1/00		100/11-09-010-28W1/00	100/12-09-010-28W1/00
Factor		1		1	1
Cumulative Oil (Mstb)		0.0		24.9	89.3
Well 2		102/12-09-010-28W1/00	102/12-09-010-28W1/00	102/12-09-010-28W1/00	102/12-09-010-28W1/00
Factor		0.25	0.25	0.25	0.25
Cumulative Oil (Mstb)		56.7	56.7	56.7	56.7
Well 3		102/13-09-010-28W1/00	102/13-09-010-28W1/00	102/13-09-010-28W1/00	102/13-09-010-28W1/00
Factor		0.125	0.125	0.125	0.125
Cumulative Oil (Mstb)		90.3	90.3	90.3	90.3

Table 1 – Summary of Original Oil In Place and Tract Factor Calculations (cont'd)

Daly Unit No. 15
Lodgepole Unit

Tract LSD	Tract Weighting	Total	13-9 13-09-010-28W1	14-9 14-09-010-28W1	15-9 15-09-010-28W1	16-9 16-09-010-28W1	11-10 11-10-010-28W1
Tract Factor		100.000000000%	6.438335383%	7.294228494%	7.259994585%	7.481776719%	5.275021145%
Flossie Lake							
Area (ac)		560	40	40	40	40	40
h (m)			4.4	4.2	4.9	6.0	5.4
Vb (ac-ft)		9,383	577	551	643	787	709
phi			11.5%	11.5%	11.5%	11.5%	11.5%
Sw			25%	25%	25%	25%	25%
HCPV			0.380	0.362	0.423	0.518	0.466
OOIP (Mbbls)		6,278	386	369	430	527	474
OOIP (Mstb)		5,868	361	345	402	492	443
OOIP (10^3m^3)		933	57	55	64	78	70
Middle Daly (Green)							
Area (ac)		560	40.0	40.0	40.0	40.0	40.0
h (m)			4.4	4.4	4.7	4.5	3.5
Vb (ac-ft)		8,373	577	577	617	591	459
phi			10.3%	10.3%	10.3%	10.3%	10.3%
Sw			30%	30%	30%	30%	30%
HCPV		5	0.317	0.317	0.339	0.324	0.252
OOIP (Mbbls)		4,683	323	323	345	330	257
OOIP (Mstb)		4,377	302	302	322	309	240
OOIP (10^3m^3)		696	48	48	51	49	38
Lower Daly (Purple)							
Area (ac)		560	40.0	40.0	40.0	40.0	40.0
h (m)			5.3	6.2	4.6	4.0	2.8
Vb (ac-ft)		9,239	696	814	604	525	367
phi			9.5%	9.5%	9.5%	9.5%	9.5%
Sw			30%	30%	30%	30%	30%
HCPV		5	0.352	0.412	0.306	0.266	0.186
OOIP (Mbbls)		4,766	359	420	311	271	190
OOIP (Mstb)		4,455	335	392	291	253	177
OOIP (10^3m^3)		708	53	62	46	40	28
Crinoid							
Area (ac)		560	40.0	40.0	40.0	40.0	40.0
h (m)			2.4	4.2	4.5	4.5	1.1
Vb (ac-ft)		6,624	315	551	591	591	144
phi			9.3%	9.3%	9.3%	9.3%	9.3%
Sw			35%	35%	35%	35%	35%
HCPV		3	0.145	0.254	0.272	0.272	0.066
OOIP (Mbbls)		3,200	148	258	277	277	68
OOIP (Mstb)		2,991	138	242	259	259	63
OOIP (10^3m^3)		476	22	38	41	41	10
Total Lodgepole							
Total OOIP (Mstb)		**17,690**	**1,136**	**1,280**	**1,274**	**1,313**	**924**
Total OOIP (10^3m^3)		2,812	181	204	203	209	147
Cumulative Oil (Mstb)		**291**	**16.1**	**11.3**	**11.3**	**11.3**	**5.9**
OOIP-Cum Prd (Mstb)	**100%**	**17,399**	**1,120**	**1,269**	**1,263**	**1,302**	**918**

Comments: **Cumulative production to July 2017**
Bo **1.07**

Well 1		100/13-09-010-28W1/00				100/11-10-010-28W1/00
Factor		1				1
Cumulative Oil (Mstb)		4.9				0.0
Well 2		102/13-09-010-28W1/00	102/13-09-010-28W1/00	102/13-09-010-28W1/00	102/13-09-010-28W1/00	102/12-10-010-28W1/00
Factor		0.125	0.125	0.125	0.125	0.5
Cumulative Oil (Mstb)		90.3	90.3	90.3	90.3	11.8
Well 3		103/13-09-010-28W1/00	103/13-09-010-28W1/00	103/13-09-010-28W1/00	103/13-09-010-28W1/00	
Factor		0.25	0.25	0.25	0.25	
Cumulative Oil (Mstb)		0.0	0.0	0.0	0.0	

Table 1 – Summary of Original Oil In Place and Tract Factor Calculations (cont'd)

Daly Unit No. 15
Lodgepole Unit

Tract LSD	Tract Weighting	Total	12-10 12-10-010-28W1	13-10 13-10-010-28W1	14-10 14-10-010-28W1	15-10 15-10-010-28W1
Tract Factor		100.000000000%	7.122913931%	6.777920744%	6.090726984%	6.931832007%
Flossie Lake						
Area (ac)		560	40	40	40	40
h (m)			5.8	5.9	5.2	4.5
Vb (ac-ft)		9,383	761	774	682	591
phi			11.5%	11.5%	11.5%	11.5%
Sw			25%	25%	25%	25%
HCPV			0.500	0.509	0.449	0.388
OOIP (Mbbls)		6,278	509	518	457	395
OOIP (Mstb)		5,868	476	484	427	369
OOIP (10^3m^3)		933	76	77	68	59
Middle Daly (Green)						
Area (ac)		560	40.0	40.0	40.0	40.0
h (m)			5.0	4.4	4.4	5.3
Vb (ac-ft)		8,373	656	577	577	696
phi			10.3%	10.3%	10.3%	10.3%
Sw			30%	30%	30%	30%
HCPV		5	0.361	0.317	0.317	0.382
OOIP (Mbbls)		4,683	367	323	323	389
OOIP (Mstb)		4,377	343	302	302	364
OOIP (10^3m^3)		696	55	48	48	58
Lower Daly (Purple)						
Area (ac)		560	40.0	40.0	40.0	40.0
h (m)			3.1	3.1	3.3	5.1
Vb (ac-ft)		9,239	407	407	433	669
phi			9.5%	9.5%	9.5%	9.5%
Sw			30%	30%	30%	30%
HCPV		5	0.206	0.206	0.219	0.339
OOIP (Mbbls)		4,766	210	210	223	345
OOIP (Mstb)		4,455	196	196	209	323
OOIP (10^3m^3)		708	31	31	33	51
Crinoid						
Area (ac)		560	40.0	40.0	40.0	40.0
h (m)			4.0	3.5	2.2	2.7
Vb (ac-ft)		6,824	525	459	289	354
phi			9.3%	9.3%	9.3%	9.3%
Sw			35%	35%	35%	35%
HCPV		3	0.242	0.212	0.133	0.163
OOIP (Mbbls)		3,200	246	215	135	166
OOIP (Mstb)		2,991	230	201	127	155
OOIP (10^3m^3)		476	37	32	20	25
Total Lodgepole						
Total OOIP (Mstb)		**17,690**	**1,245**	**1,184**	**1,064**	**1,211**
Total OOIP (10^3m^3)		2,812	198	188	169	193
Cumulative Oil (Mstb)		**291**	**5.9**	**4.2**	**4.2**	**4.8**
OOIP-Cum Prd (Mstb)	**100%**	**17,399**	**1,239**	**1,179**	**1,060**	**1,206**

Comments: **Cumulative production to July 2017**
Bo **1.07**

Well 1	100/12-10-010-28W1/00			100/15-10-010-28W1/00
Factor	1			1
Cumulative Oil (Mstb)	0.0			0.6
Well 2	102/12-10-010-28W1/00	102/15-10-010-28W1/00	102/15-10-010-28W1/00	102/15-10-010-28W1/00
Factor	0.5	0.3333	0.3333	0.3333
Cumulative Oil (Mstb)	11.8	12.7	12.7	12.7
Well 3				
Factor				
Cumulative Oil (Mstb)				

Table 2 – Well List – Status

UWI Well ID	Prod./Inject. Formation	First Prod. YYYY/MM	Last Prod. YYYY/MM	Type
100/09-09-010-28W1/00				Vertical (D&A)
100/11-09-010-28W1/00	Mlodgepl	1988/11	1963/08	Vertical
100/12-09-010-28W1/00	Mldgpl_U	1987/11	2017/07	Vertical
102/12-09-010-28W1/00	Mlodgepl	2014/12	2017/07	Horizontal
100/13-09-010-28W1/00	Mldgpl_U	1986/10	1992/08	Vertical
102/13-09-010-28W1/00	Mlodgepl	2014/01	2017/07	Horizontal
103/13-09-010-28W1/00				Horizontal (STN)
100/11-10-010-28W1/00				Vertical (D&A)
100/12-10-010-28W1/00				Vertical (D&A)
102/12-10-010-28W1/00	Mlodgepl	2010/09	2017/07	Horizontal
100/15-10-010-28W1/00	Mldgpl_U	1984/11	1985/10	Vertical
102/15-10-010-28W1/00	Mlodgepl	2015/01	2017/07	Horizontal

Table 3 – Cumulative Oil Production and Estimated Ultimate Recovery

UWI Well ID	Type	Cumulative Oil (Mbbl)	Estimated Ultimate Recovery (Mbbl)
100/09-09-010-28W1/00	Vertical (D&A)	0.000	0.000
100/11-09-010-28W1/00	Vertical	24.870	33.737
100/12-09-010-28W1/00	Vertical	89.334	104.49
102/12-09-010-28W1/00	Horizontal	56.654	114.196
100/13-09-010-28W1/00	Vertical	4.851	4.851
102/13-09-010-28W1/00	Horizontal	90.278	190.338
103/13-09-010-28W1/00	Horizontal (STN)	0.000	-
100/11-10-010-28W1/00	Vertical (D&A)	0.000	0.000
100/12-10-010-28W1/00	Vertical (D&A)	0.000	0.000
102/12-10-010-28W1/00	Horizontal	11.811	11.811
100/15-10-010-28W1/00	Vertical	0.605	0.605
102/15-10-010-28W1/00	Horizontal	12.652	40.036

Table 4 – Summary of Rock and Fluid Properties

Proposed Daly Unit No. 15		
Rock and Fluid Properties Lodgepole Formation		
Formation Pressure	kPa	7,800
Oil Gravity	°API	35.5
Solution Gas-Oil Ratio	m^3/m^3	15
Oil Formation Volume Factor	Rm^3/Sm^3	1.07
Average Porosity	fraction	0.09
Average Air Permeability	mD	1.2

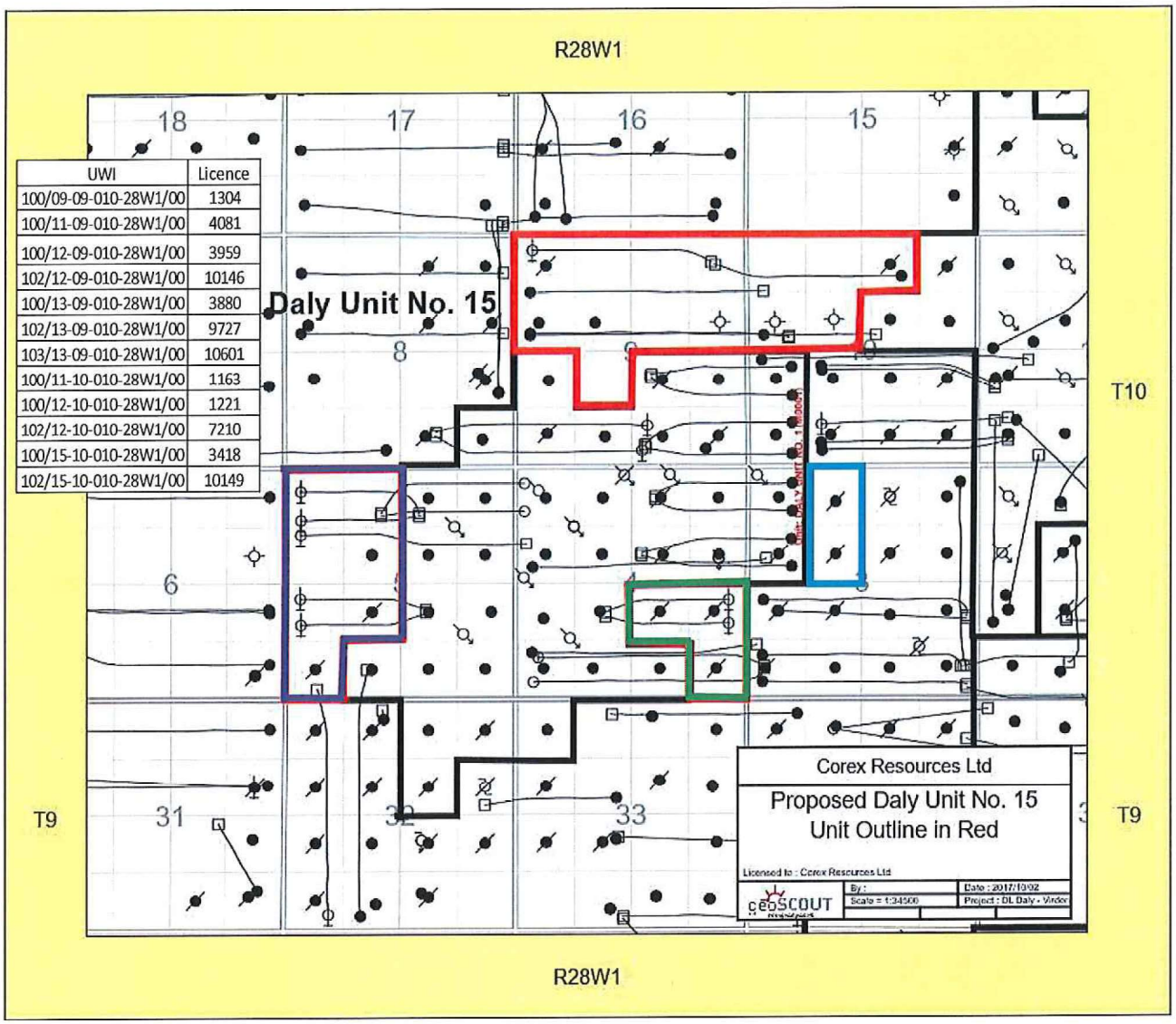


Figure 1 – Location of Proposed Daly Unit No. 15, Red Outline

- Proposed Daly Unit No. 15
- Proposed Daly Unit No. 16
- Proposed Daly Unit No. 17
- Proposed Daly Unit No. 18

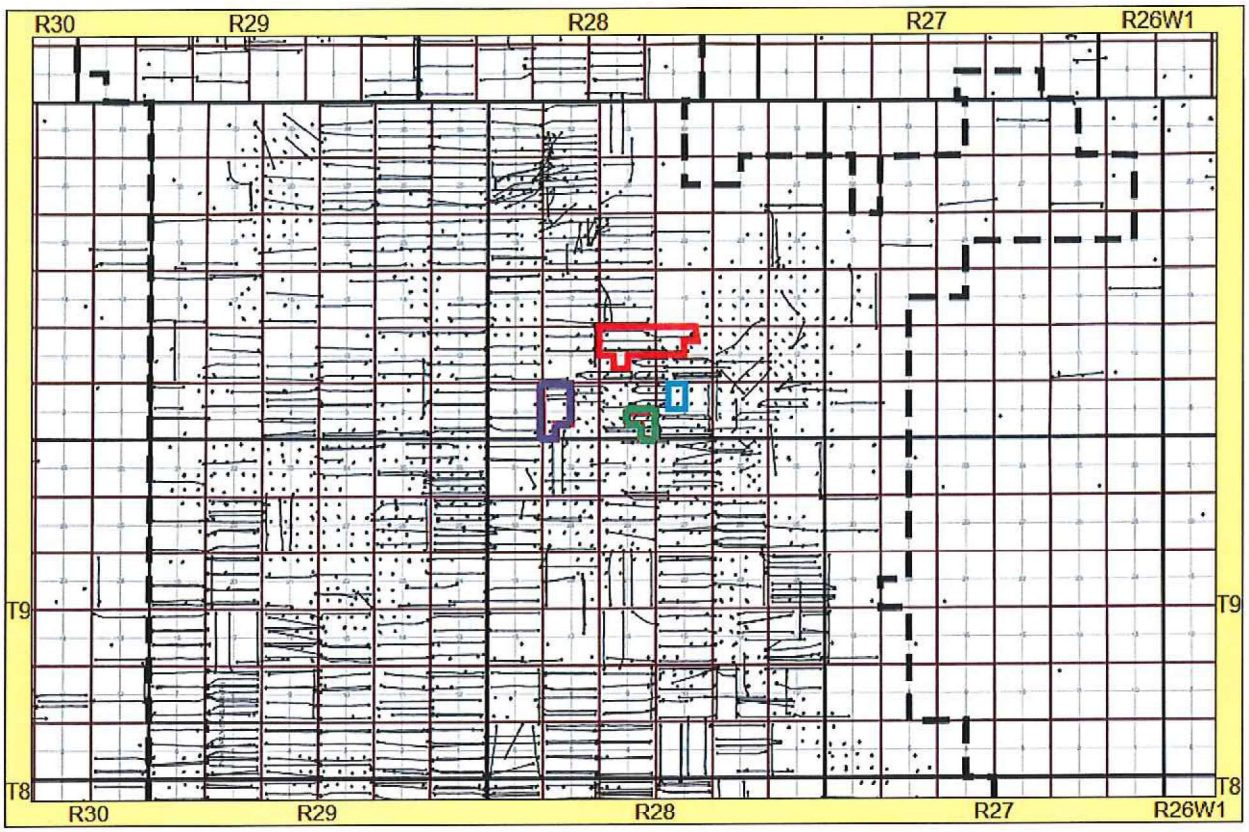


Figure 2 – Location of Proposed Daly Unit No. 15 within the Daly Sinclair Field, Red Outline

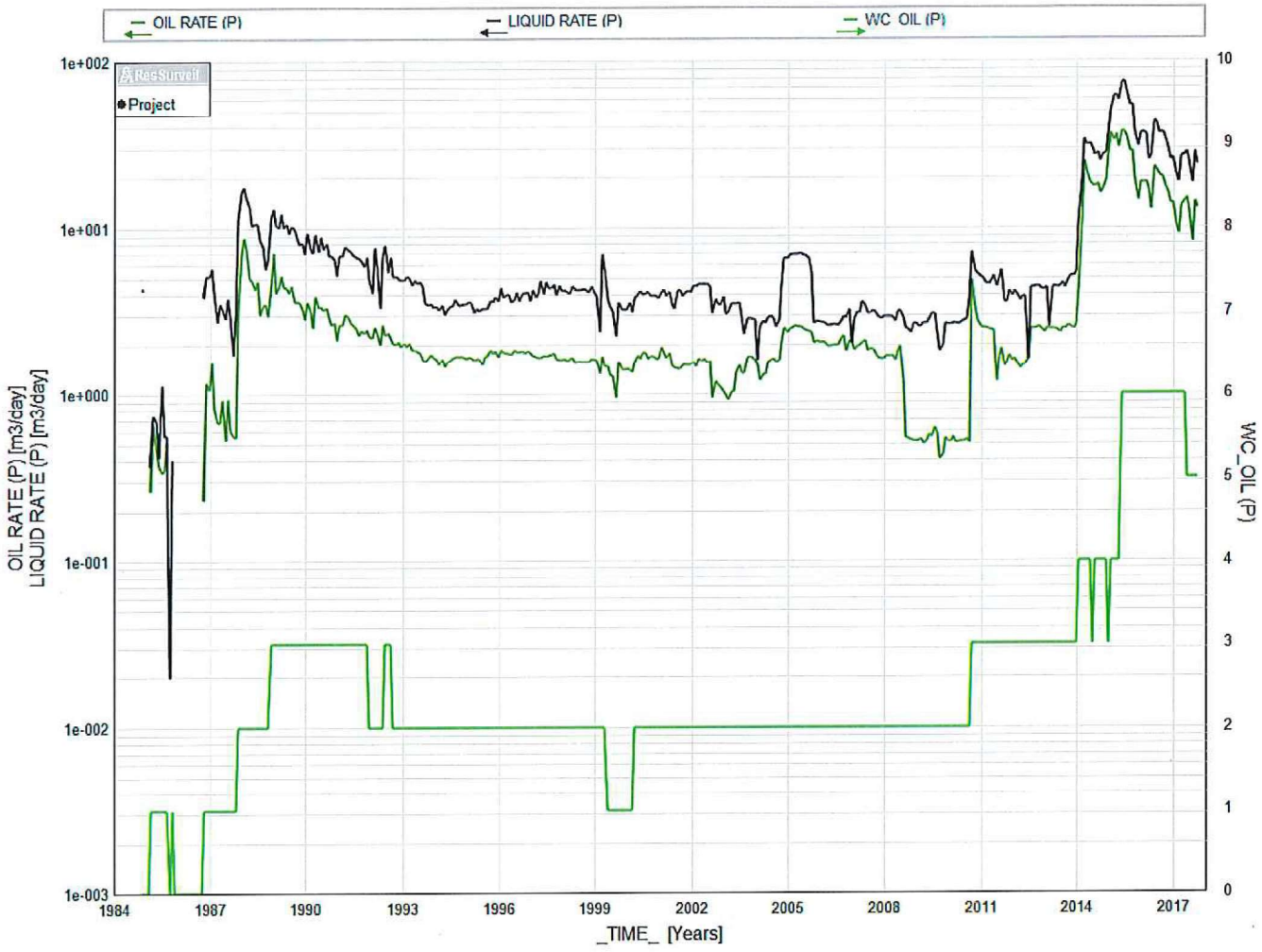


Figure 3 – Production History of Wells within Proposed Daly Unit No. 15

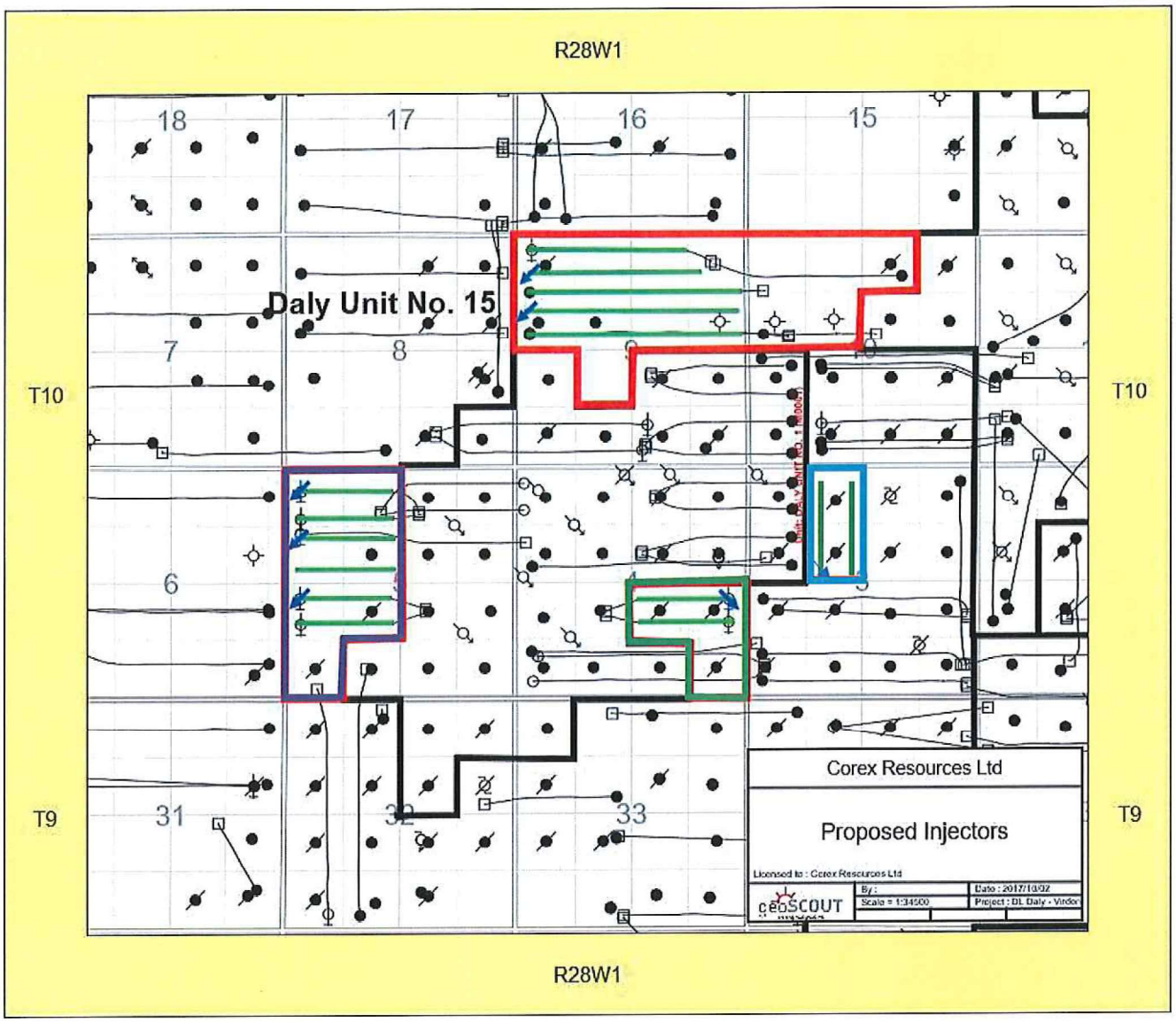


Figure 4 – Proposed Injector Locations

- Proposed Daly Unit No. 15
- Proposed Daly Unit No. 16
- Proposed Daly Unit No. 17
- Proposed Daly Unit No. 18

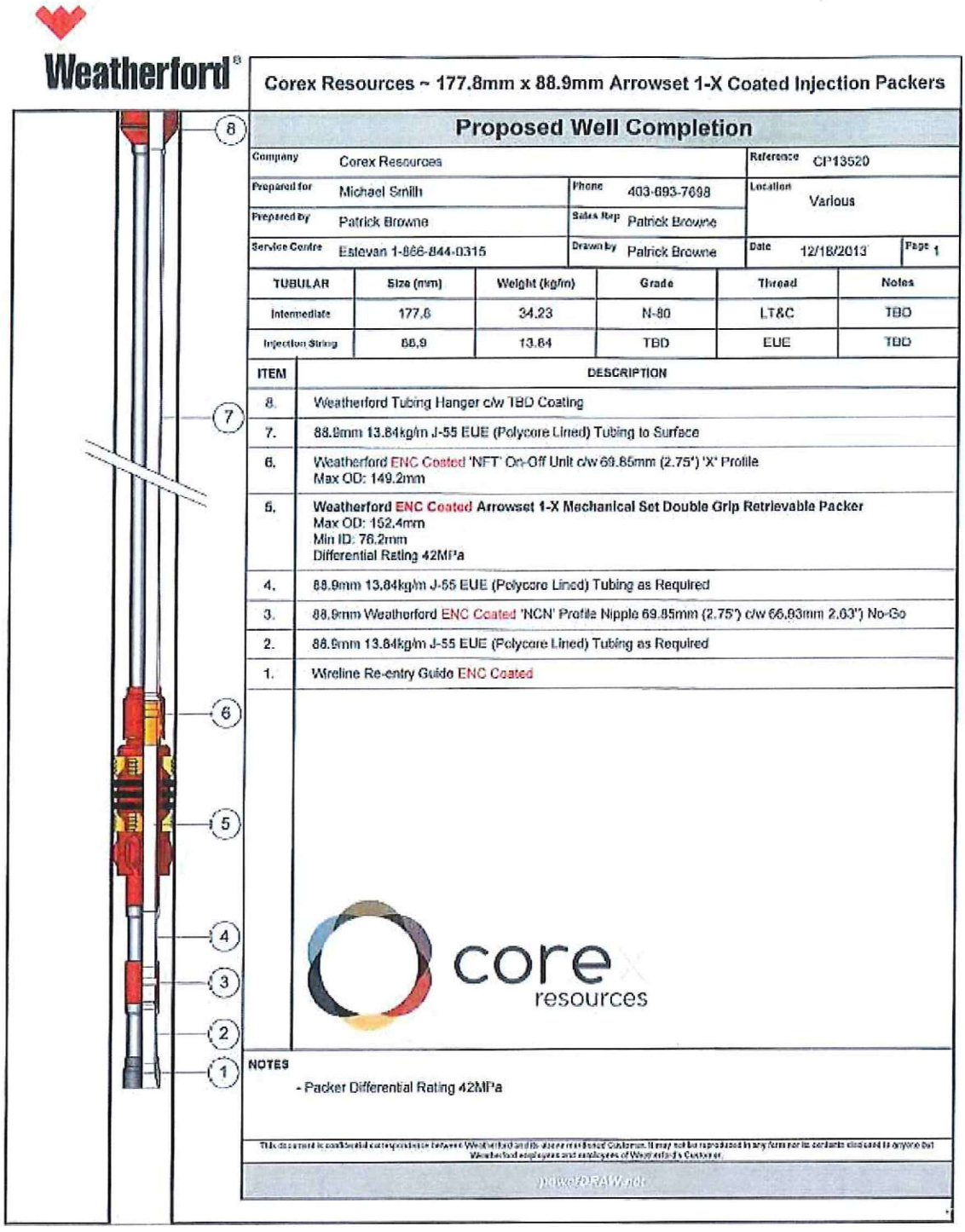


Figure 5 – Wellbore Schematic for Typical Injector

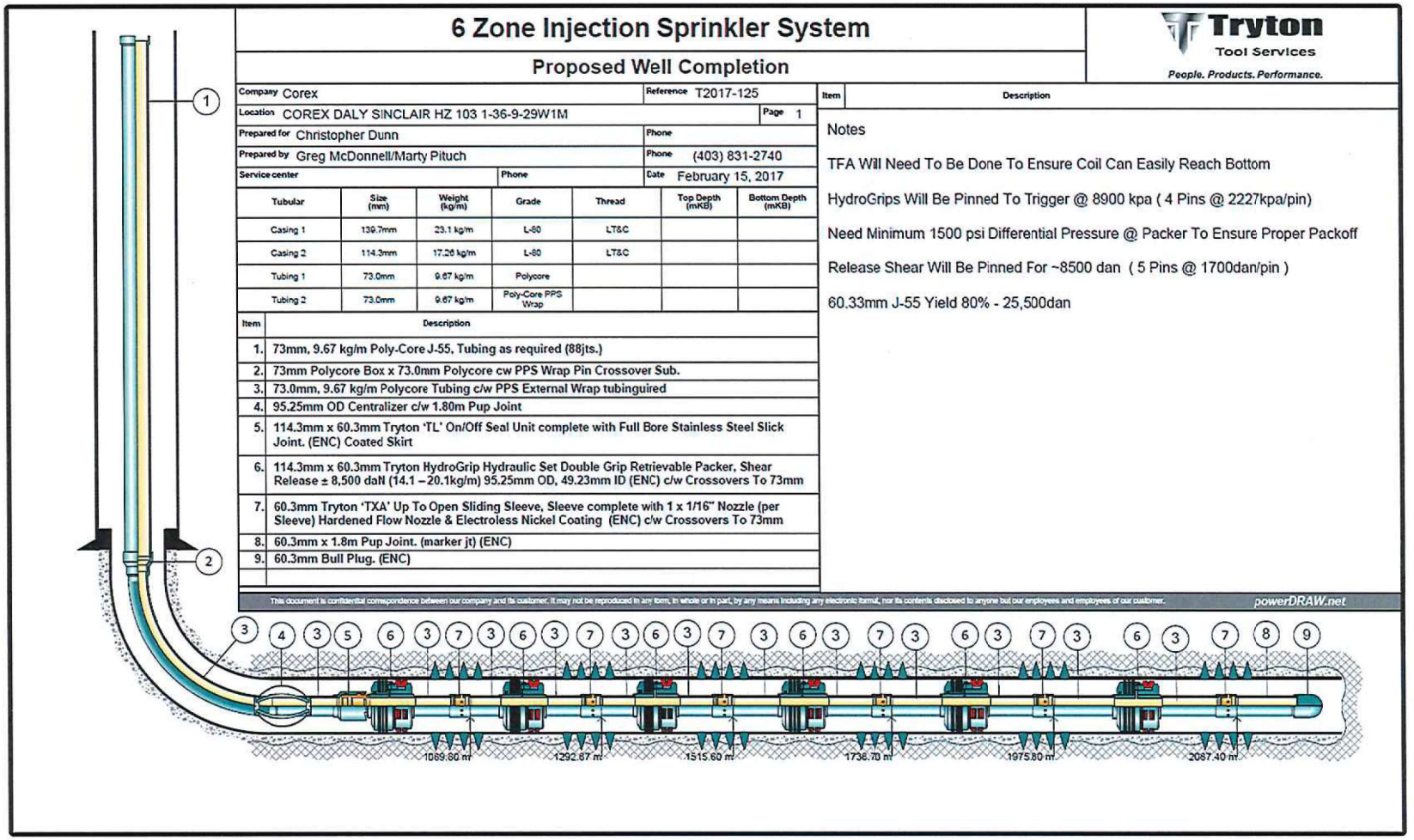


Figure 6 – Wellbore Schematic for Injector Nozzle System

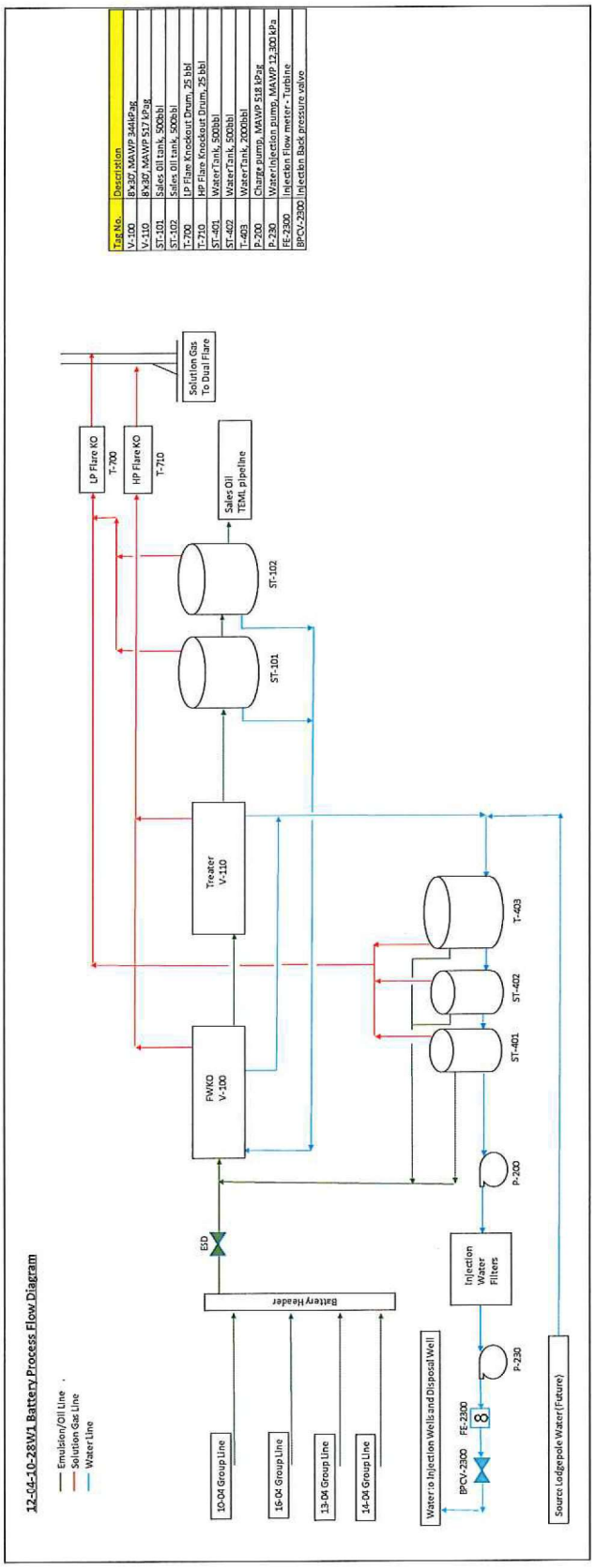


Figure 7 – Simplified Flow Diagram from Battery

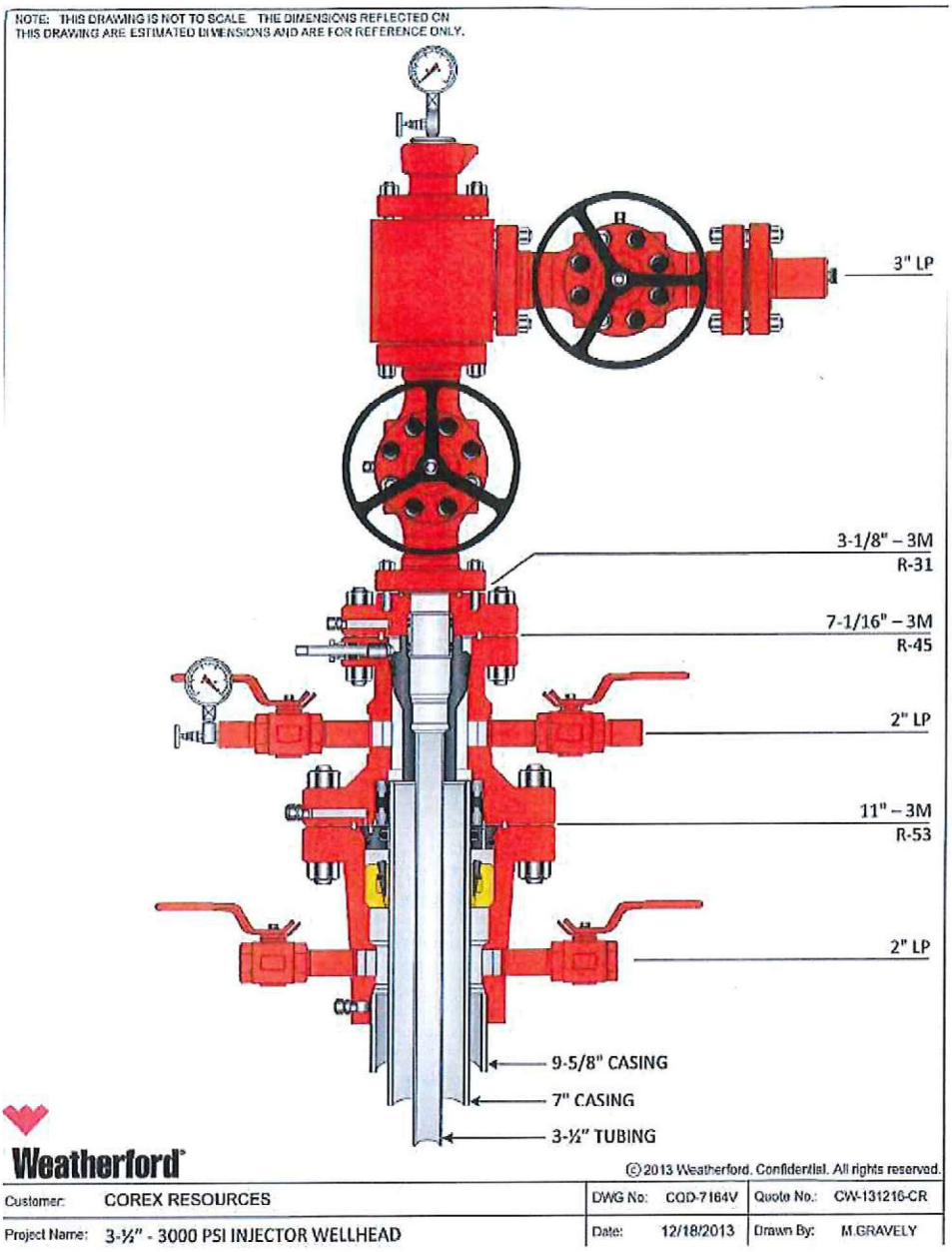
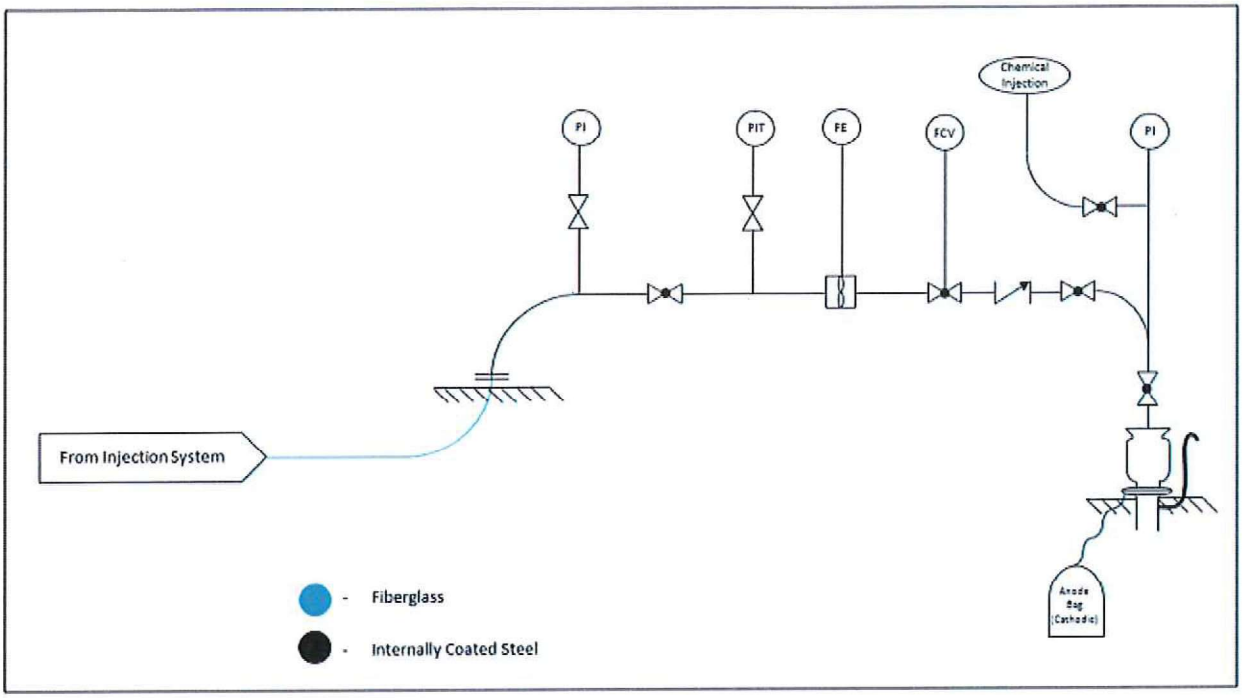


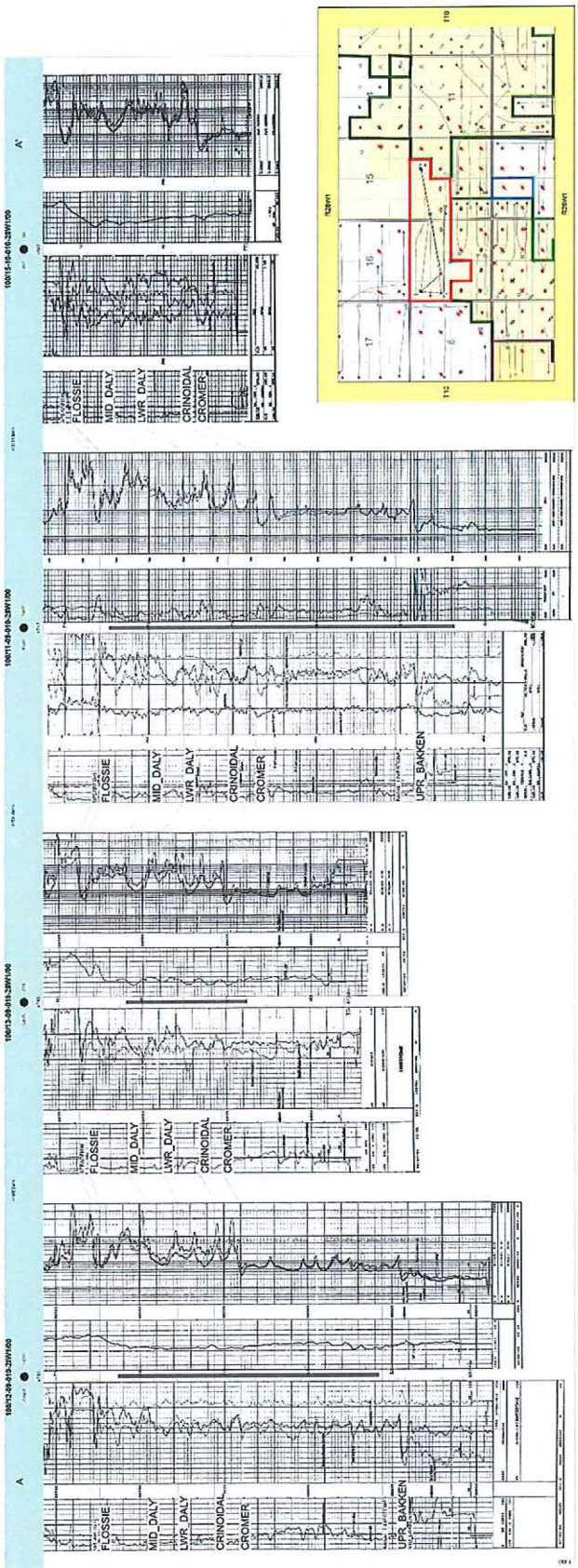
Figure 8 – Wellhead Design



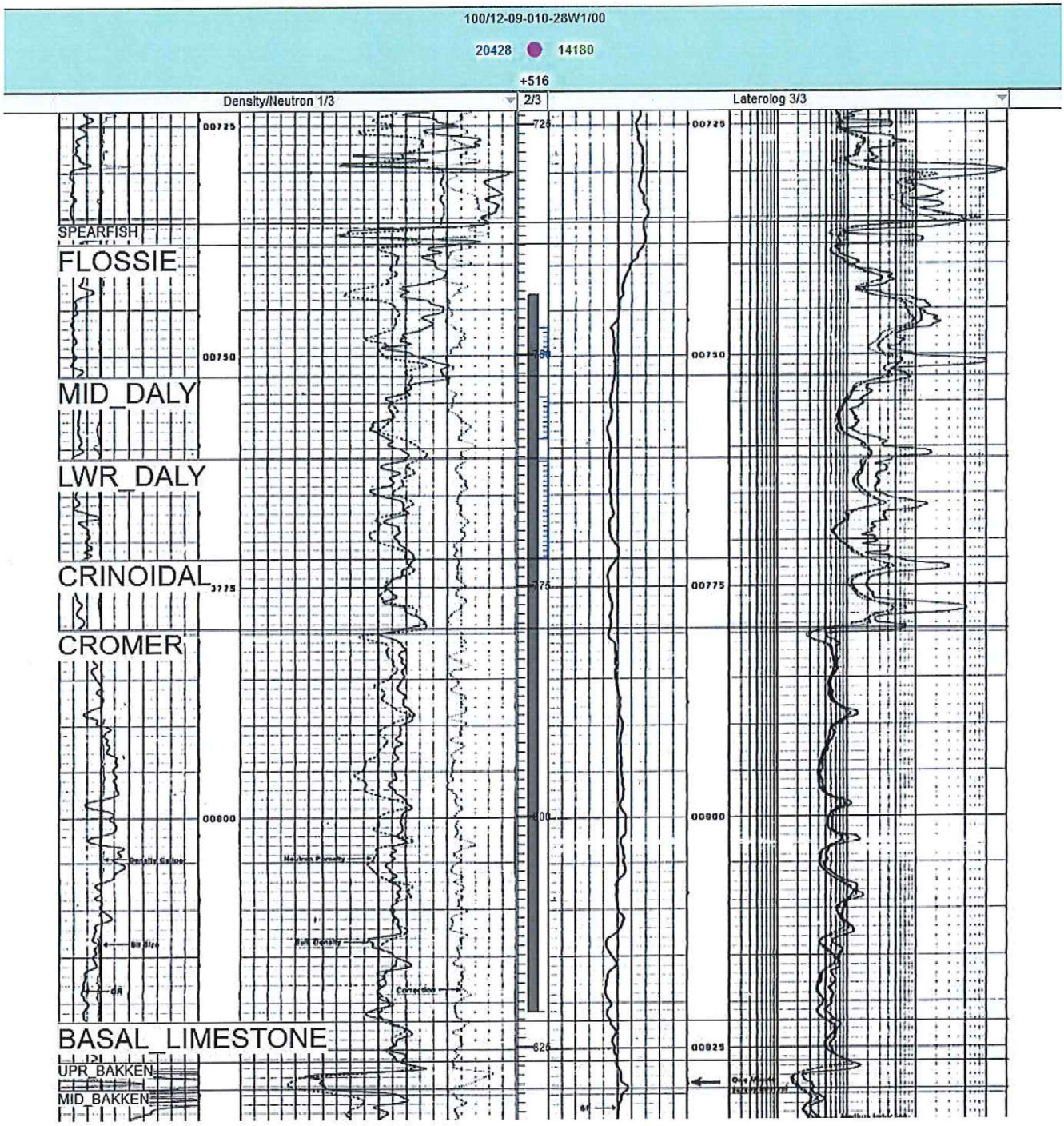
All injection pipelines will have corrosion inhibitor injected at the 12-04 facility, which will carry through to the wellhead for downhole corrosion control (wellhead injection points will be available as needed). Scale inhibitor will be injected in as well at the wellhead through continuous pumps as necessary. Both of these chemicals are also injected upstream at the producing source wells to protect the pipelines and the injection facilities at the battery. Wellbore casing will have cathodic protection installed for corrosion control. The PIT and FE on the diagram will be setup through a monitoring system in addition to one at the injection plant to monitor pipelines for any leaks through pressure and flow balance. Alarm points will be setup with callouts.

Figure 9 – Corrosion Control System & Monitoring

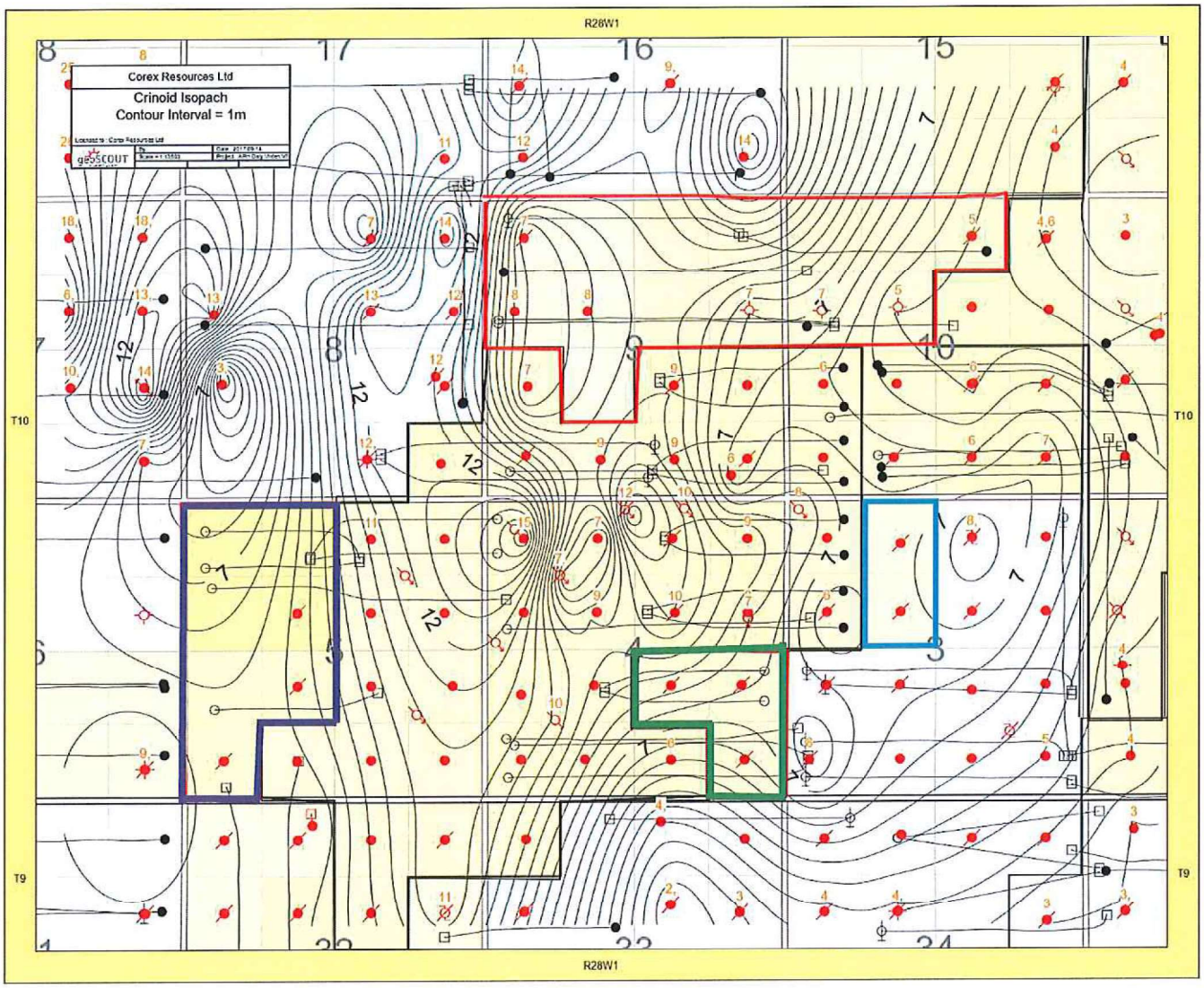
Appendix I: Cross section



Stratigraphy of the Lodgepole Formation: Type Log

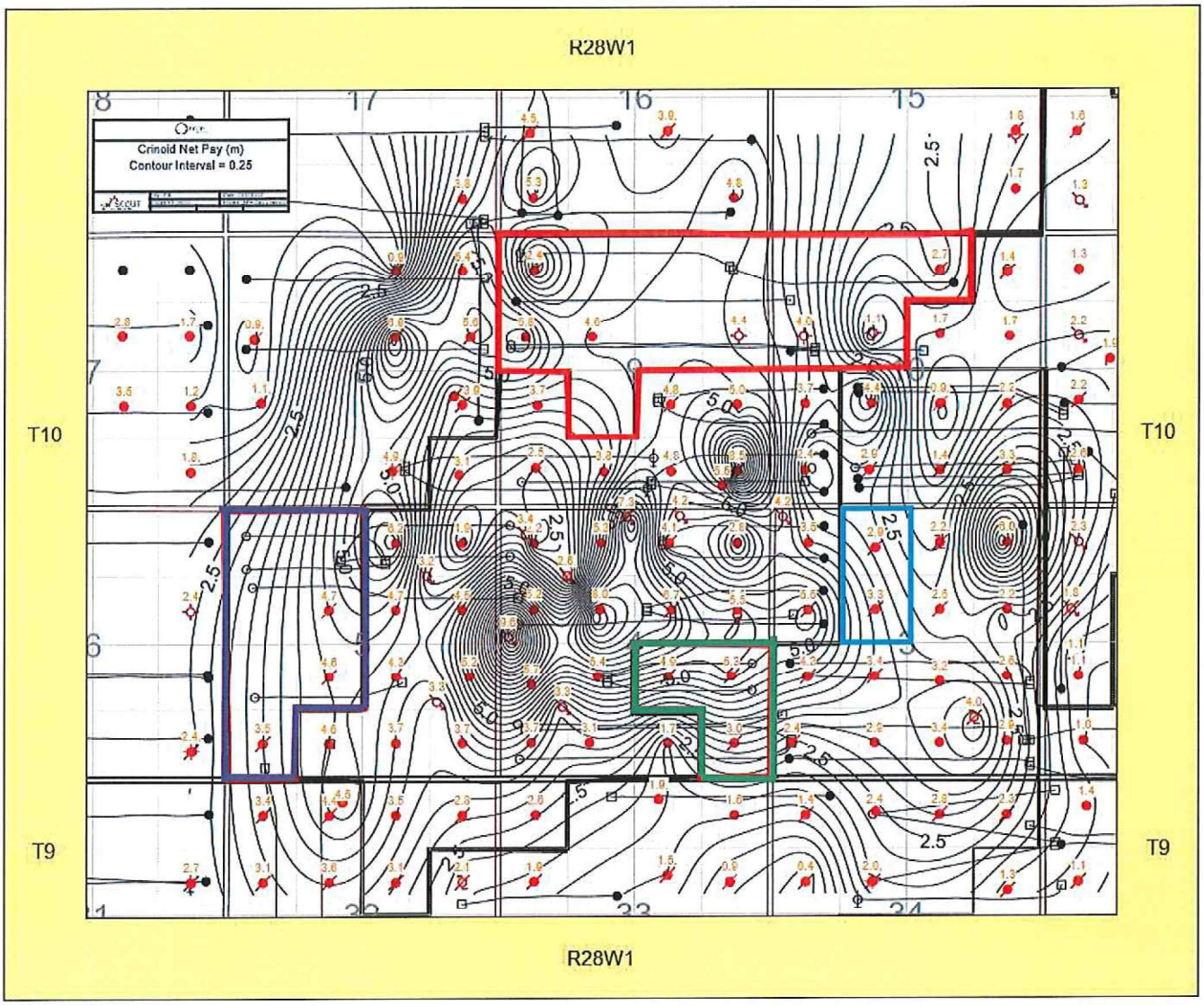


Appendix II – Crinoidal– Isopach



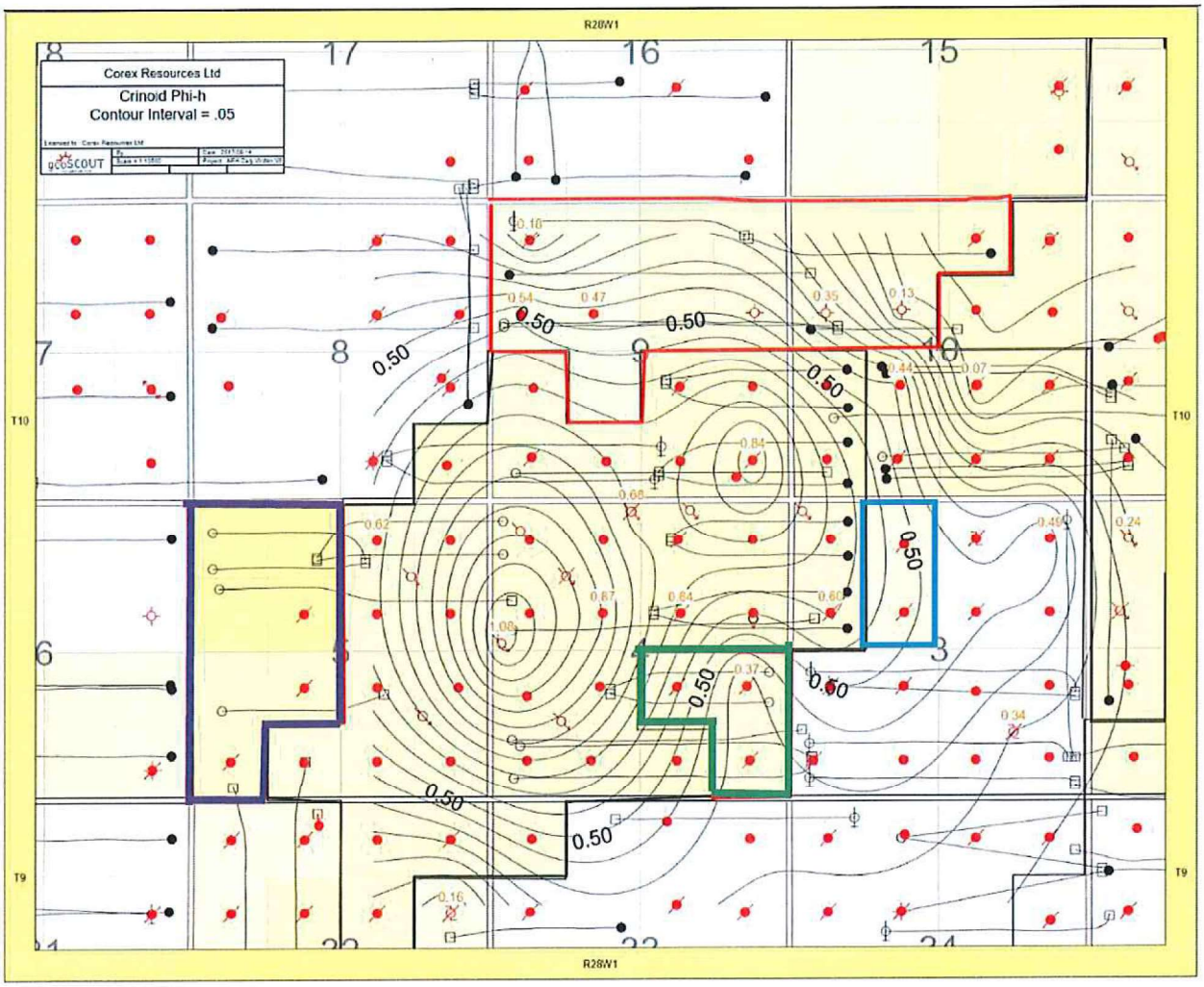
Proposed Daly Unit No. 15
Proposed Daly Unit No. 16
Proposed Daly Unit No. 17
Proposed Daly Unit No. 18

Appendix III – Crinoidal– Net Pay



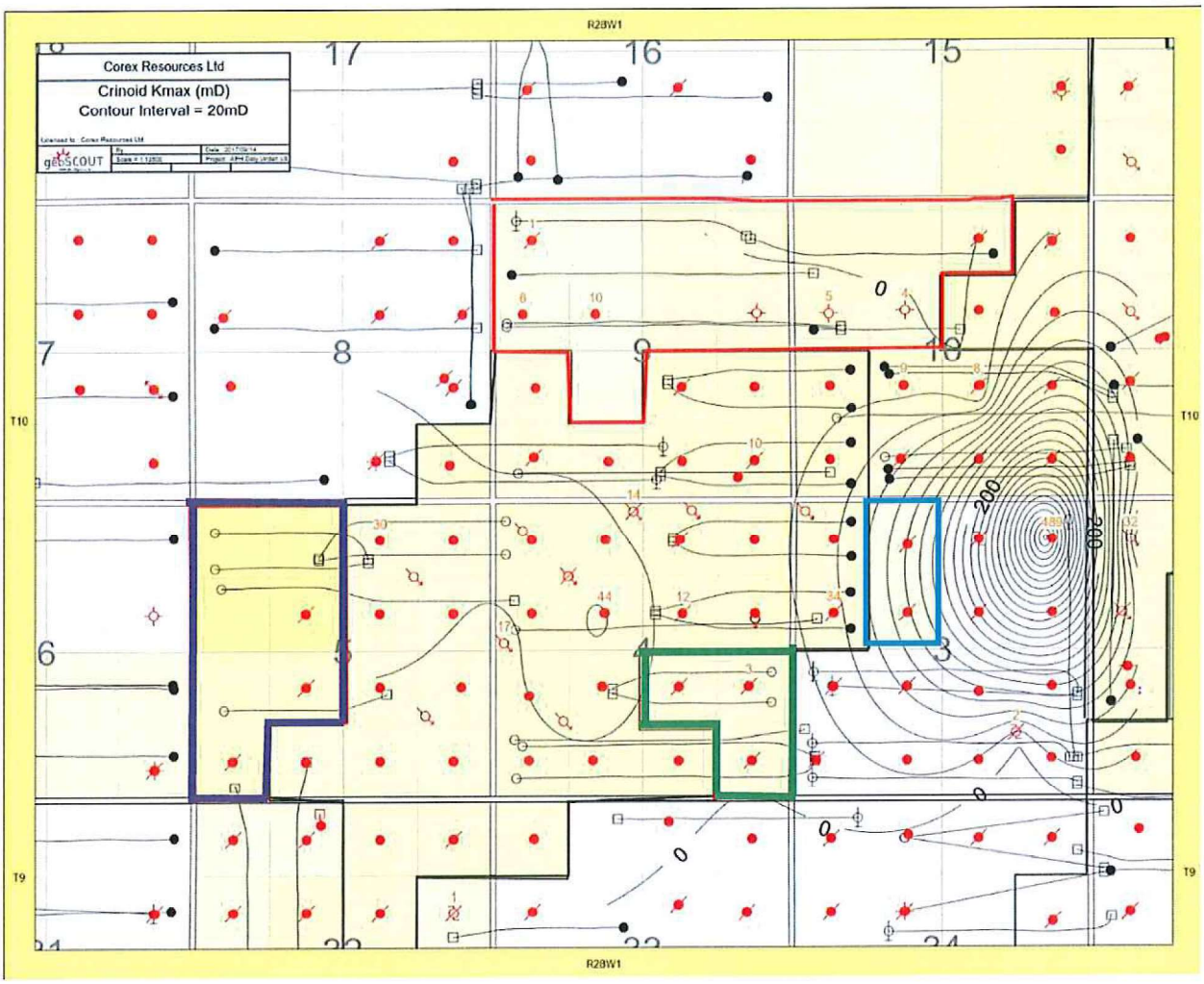
Proposed Daly Unit No. 15
Proposed Daly Unit No. 16
Proposed Daly Unit No. 17
Proposed Daly Unit No. 18

Appendix IV – Crinoidal – Porosity-Thickness



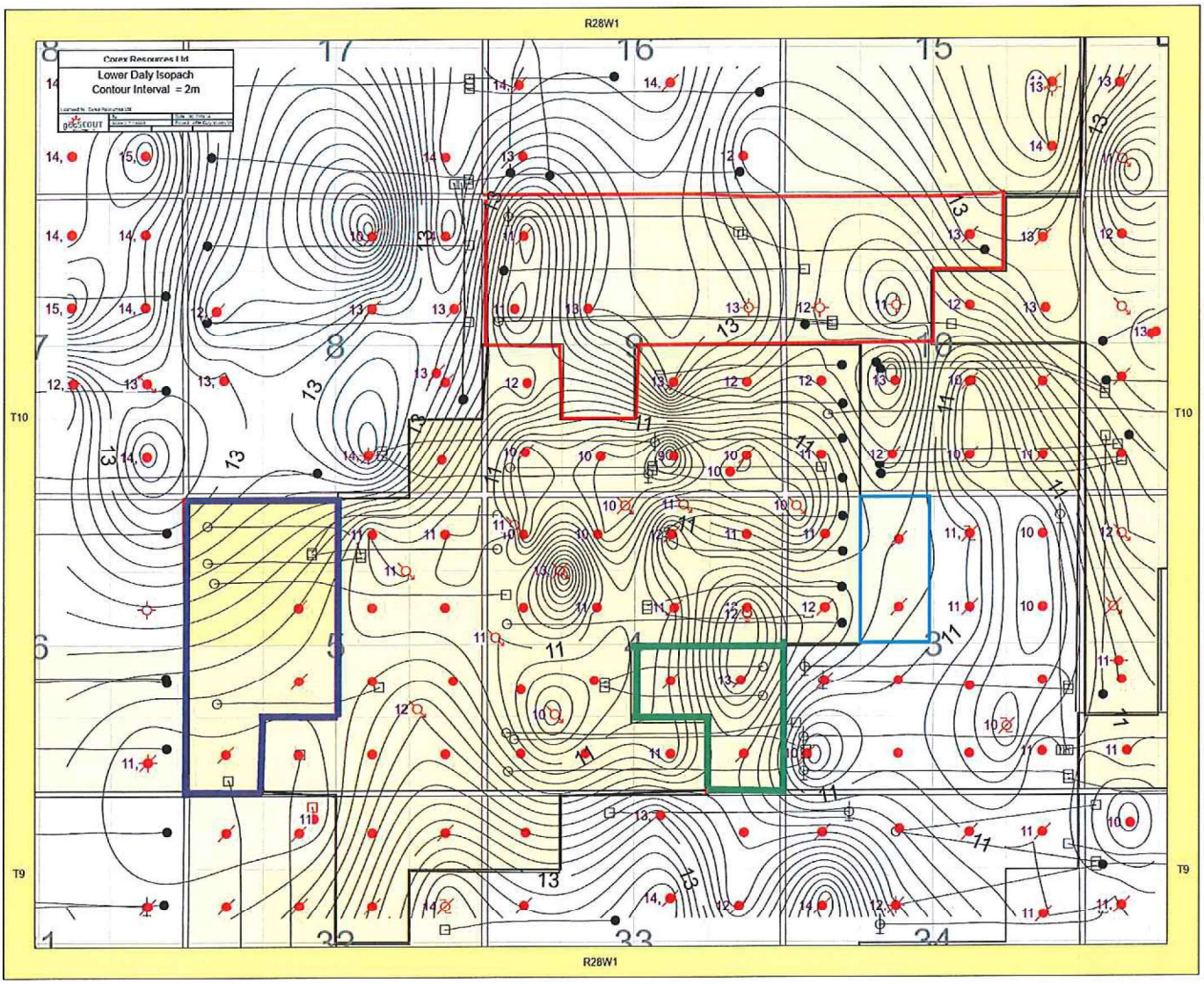
Proposed Daly Unit No. 15
Proposed Daly Unit No. 16
Proposed Daly Unit No. 17
Proposed Daly Unit No. 18

Appendix V – Crinoidal – Permeability



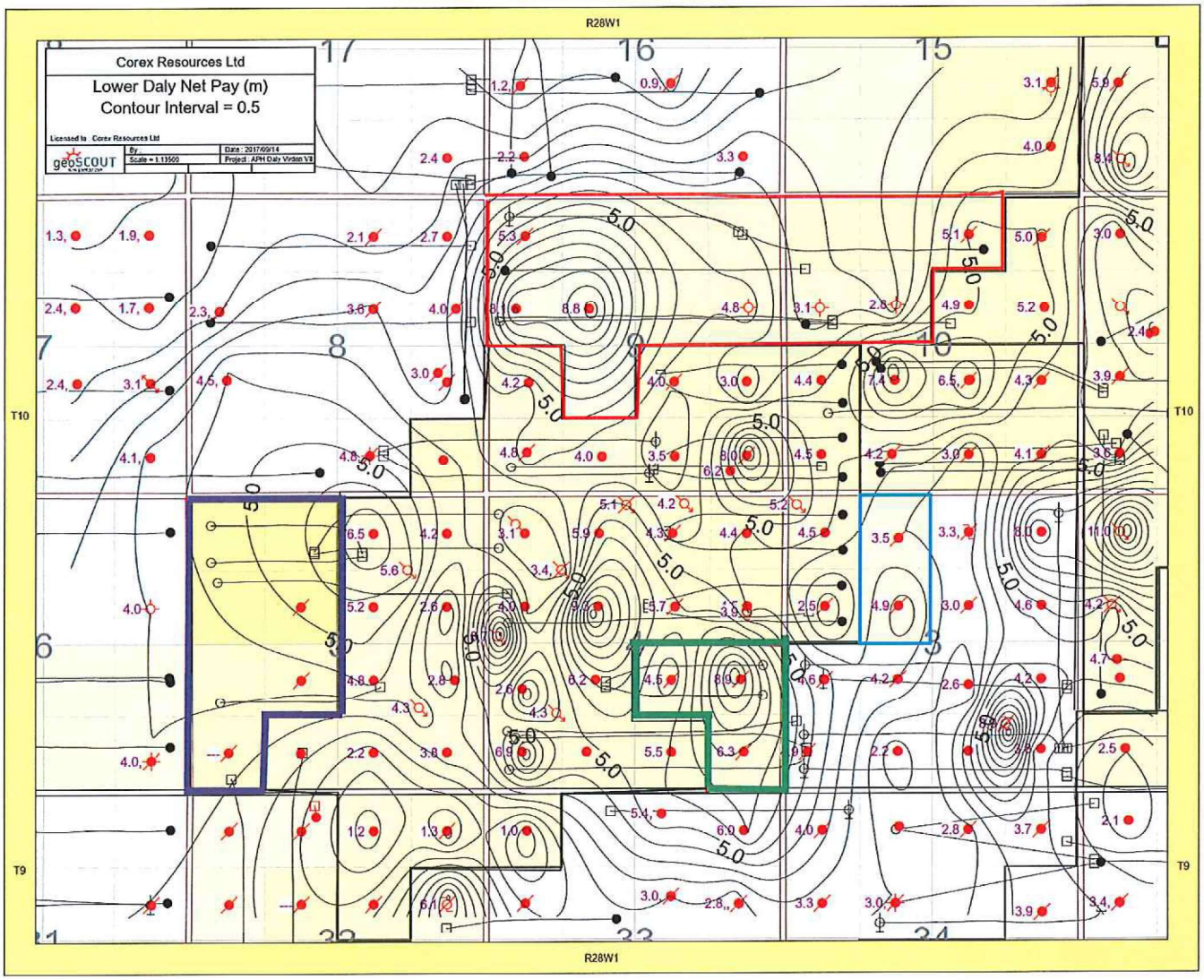
- Proposed Daly Unit No. 15
- Proposed Daly Unit No. 16
- Proposed Daly Unit No. 17
- Proposed Daly Unit No. 18

Appendix VI – Lower Daly – Isopach



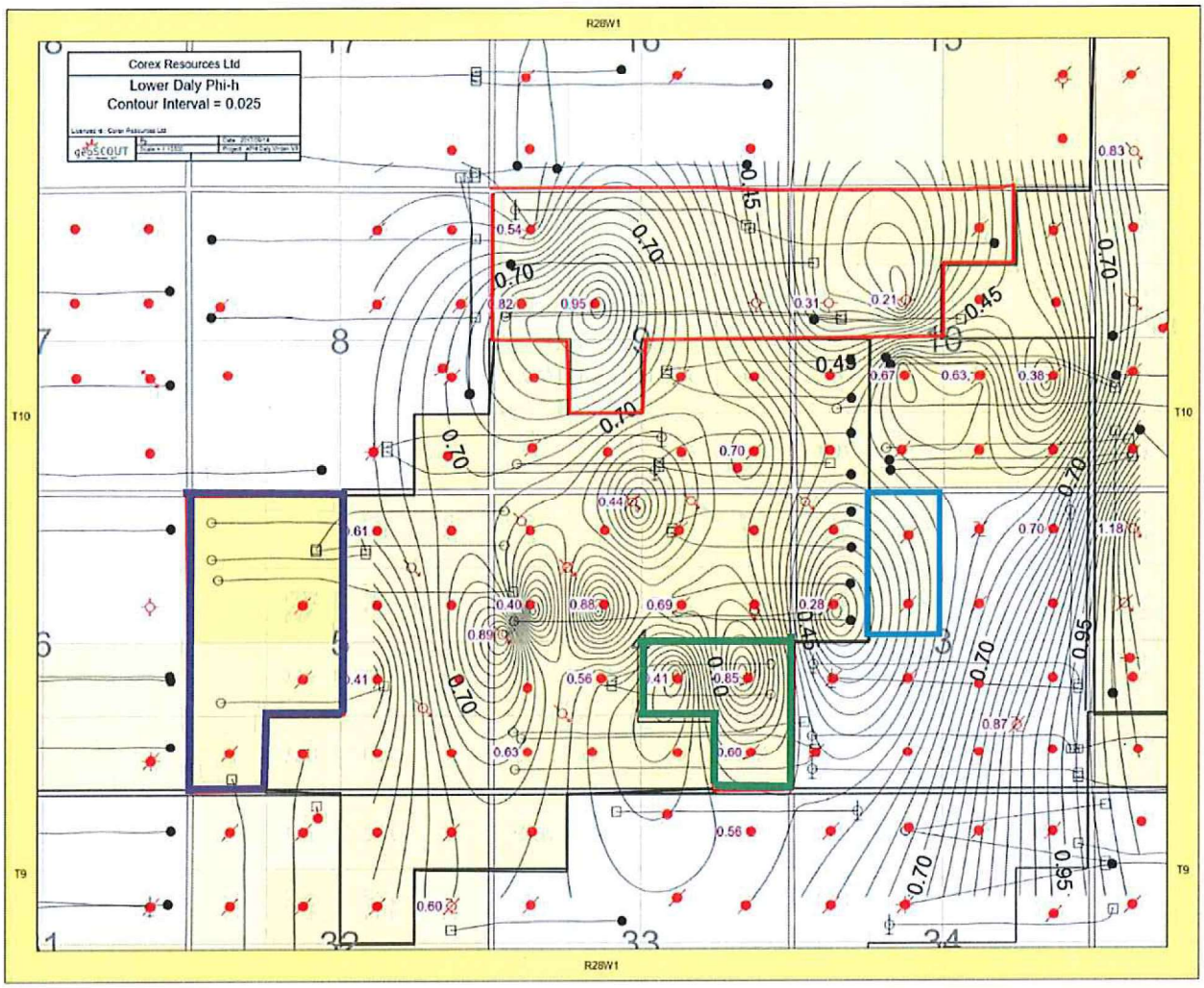
Proposed Daly Unit No. 15
Proposed Daly Unit No. 16
Proposed Daly Unit No. 17
Proposed Daly Unit No. 18

Appendix VII – Lower Daly – Net Pay



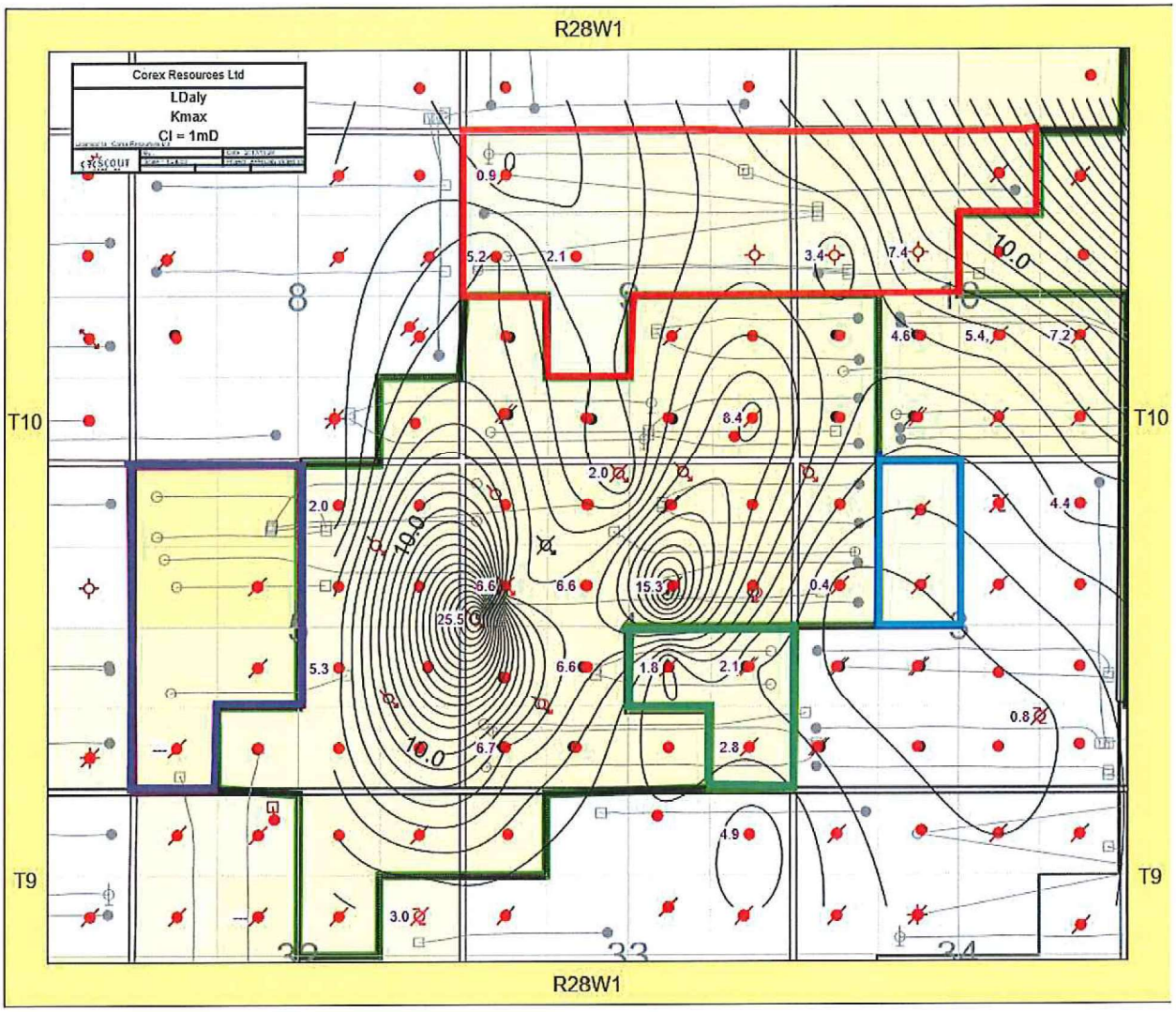
Proposed Daly Unit No. 15
Proposed Daly Unit No. 16
Proposed Daly Unit No. 17
Proposed Daly Unit No. 18

Appendix VIII – Lower Daly – Porosity-Thickness



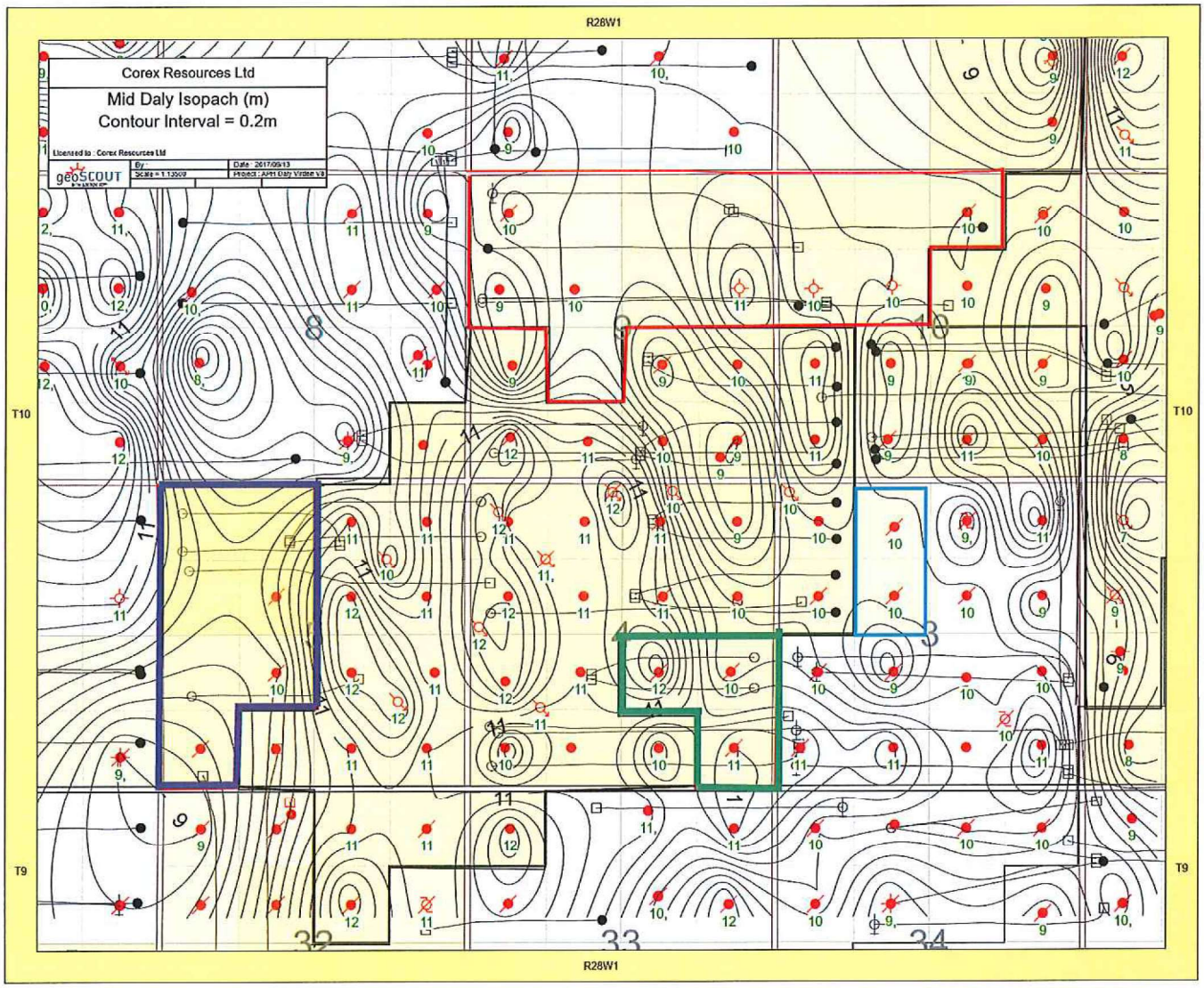
Proposed Daly Unit No. 15
Proposed Daly Unit No. 16
Proposed Daly Unit No. 17
Proposed Daly Unit No. 18

Appendix IX – Lower Daly – Permeability



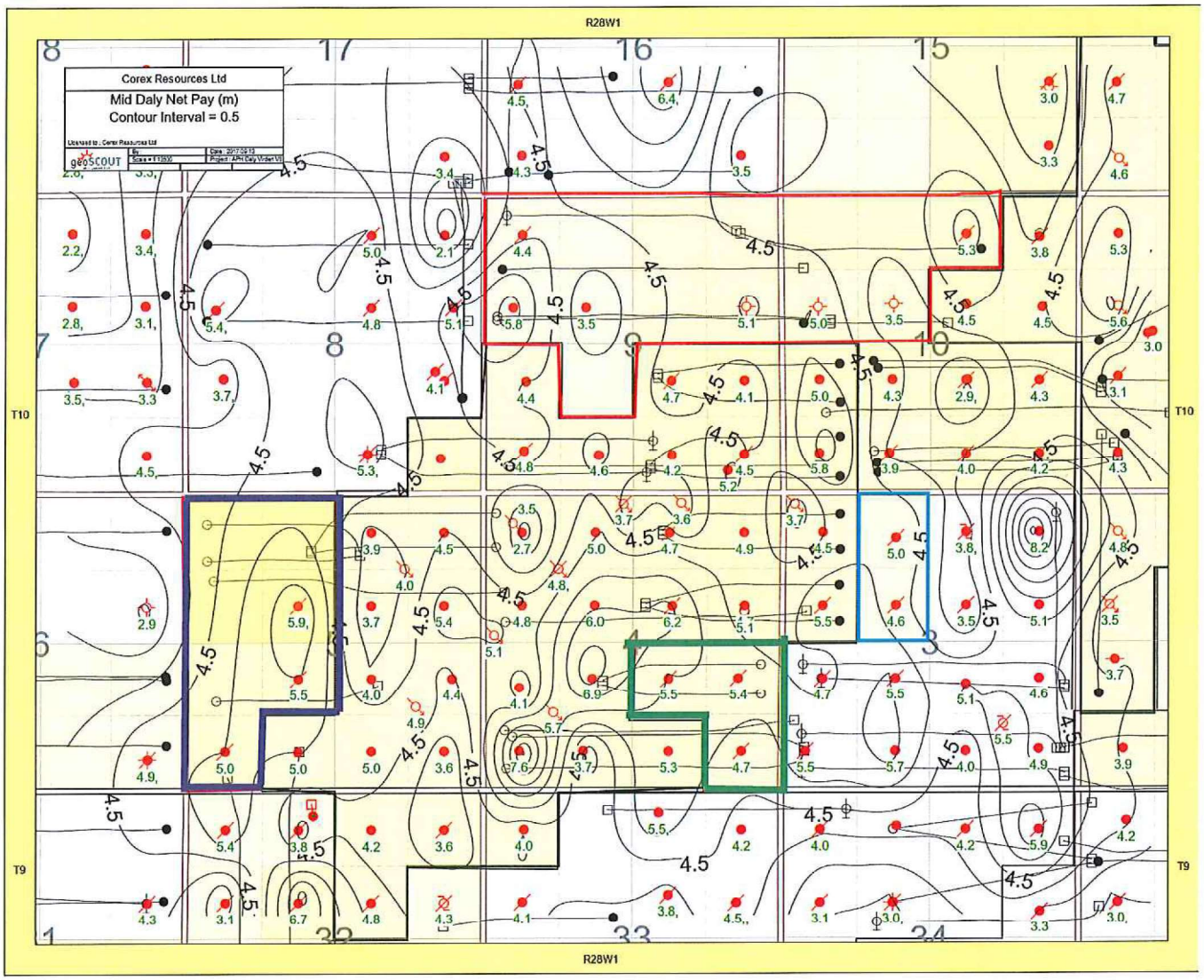
- Proposed Daly Unit No. 15
- Proposed Daly Unit No. 16
- Proposed Daly Unit No. 17
- Proposed Daly Unit No. 18

Appendix X – Middle Daly – Isopach



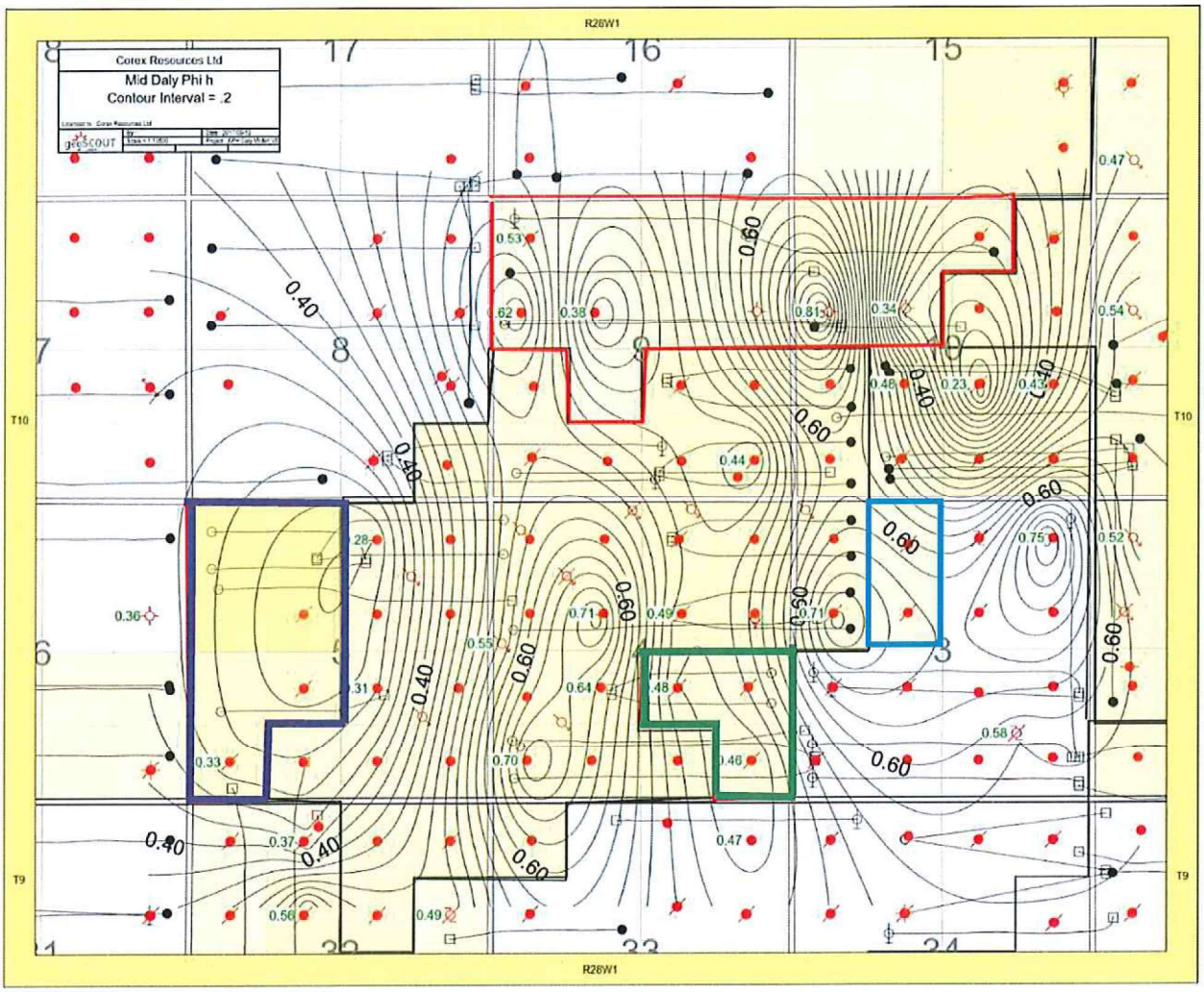
Proposed Daly Unit No. 15
Proposed Daly Unit No. 16
Proposed Daly Unit No. 17
Proposed Daly Unit No. 18

Appendix XI – Middle Daly – Net Pay



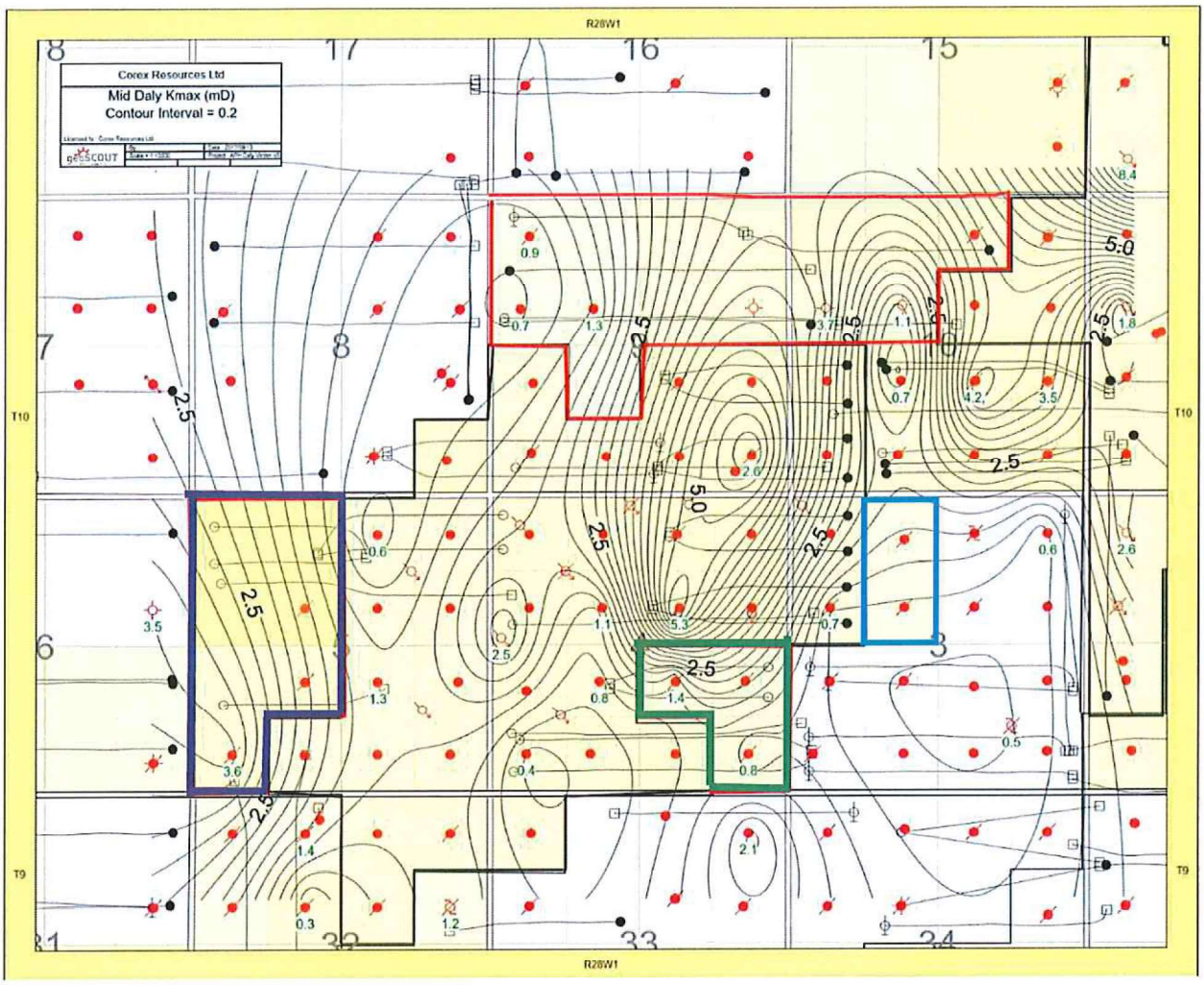
Proposed Daly Unit No. 15
Proposed Daly Unit No. 16
Proposed Daly Unit No. 17
Proposed Daly Unit No. 18

Appendix XII – Middle Daly – Porosity-Thickness



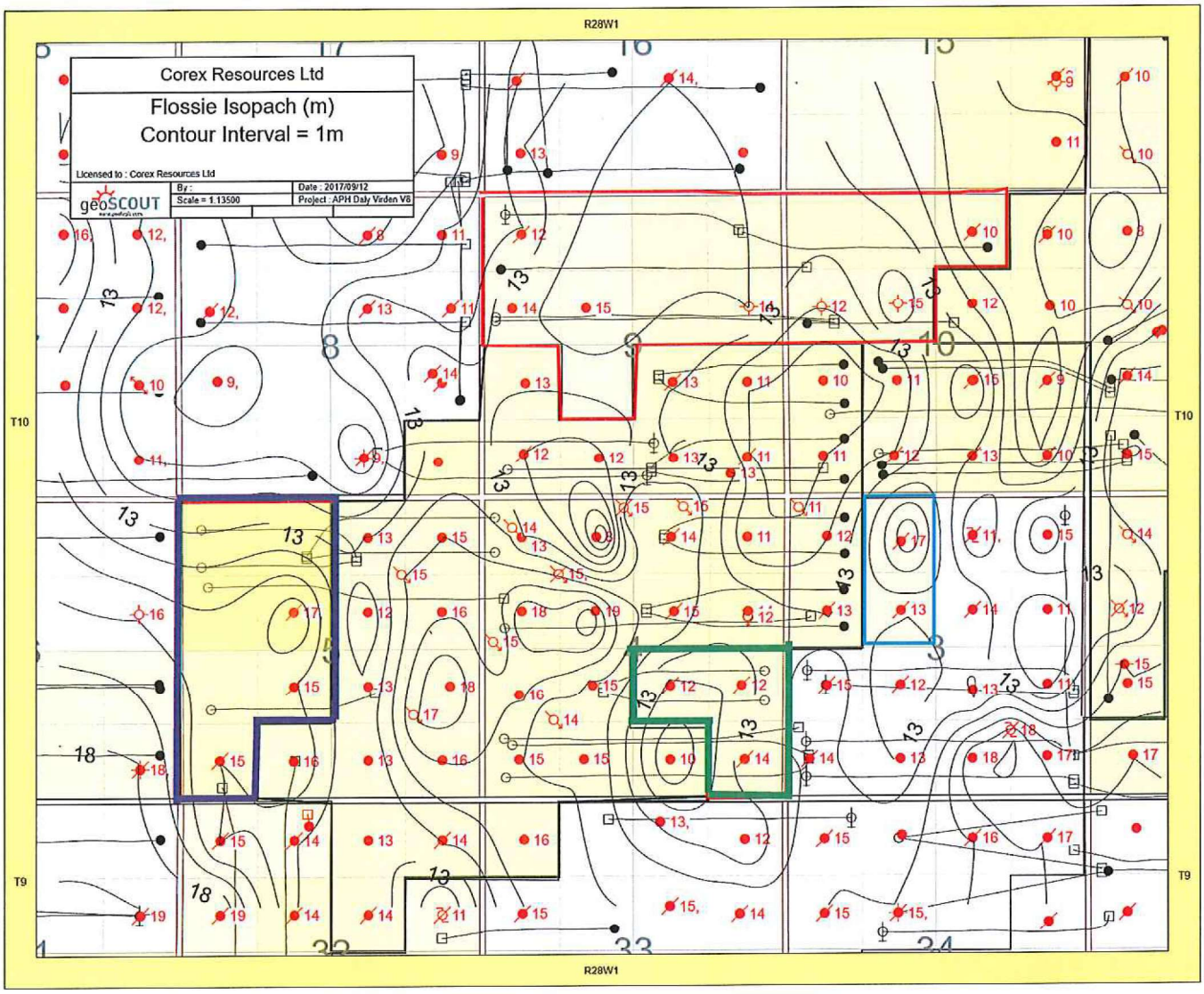
Proposed Daly Unit No. 15
Proposed Daly Unit No. 16
Proposed Daly Unit No. 17
Proposed Daly Unit No. 18

Appendix XIII – Middle Daly – Permeability



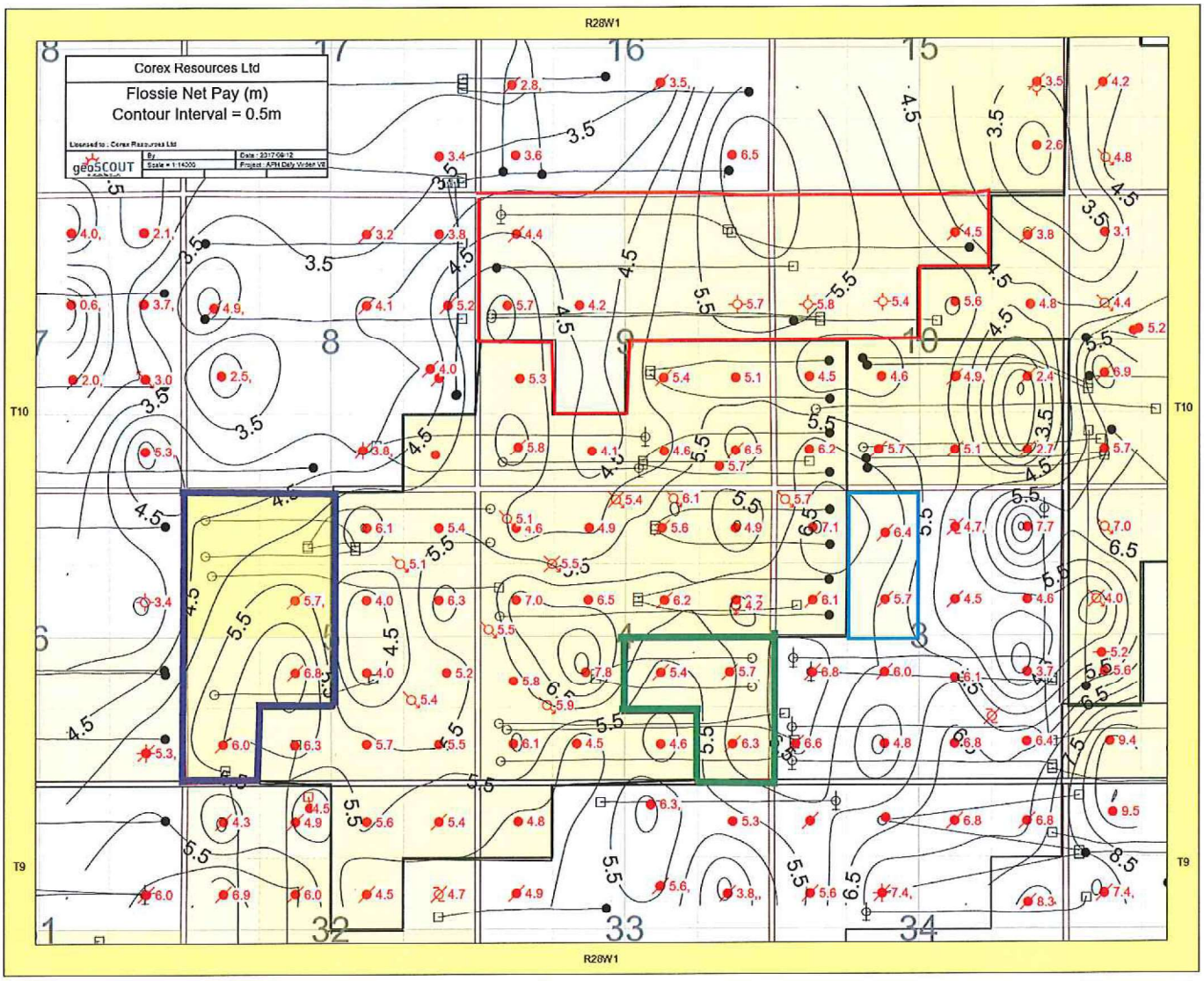
Proposed Daly Unit No. 15
Proposed Daly Unit No. 16
Proposed Daly Unit No. 17
Proposed Daly Unit No. 18

Appendix XIV – Flossie Lake – Isopach



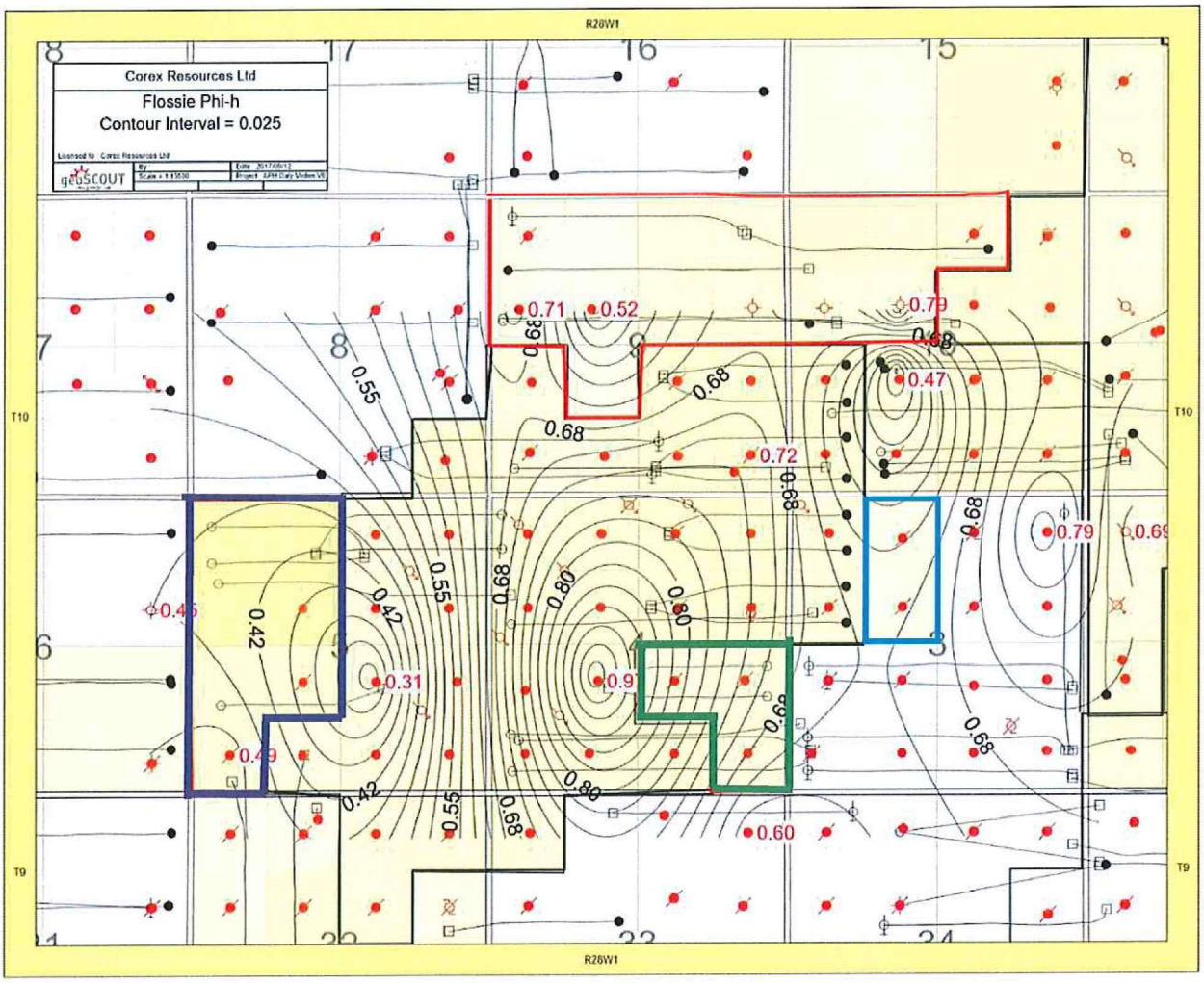
Proposed Daly Unit No. 15
Proposed Daly Unit No. 16
Proposed Daly Unit No. 17
Proposed Daly Unit No. 18

Appendix XV – Flossie Lake – Net Pay



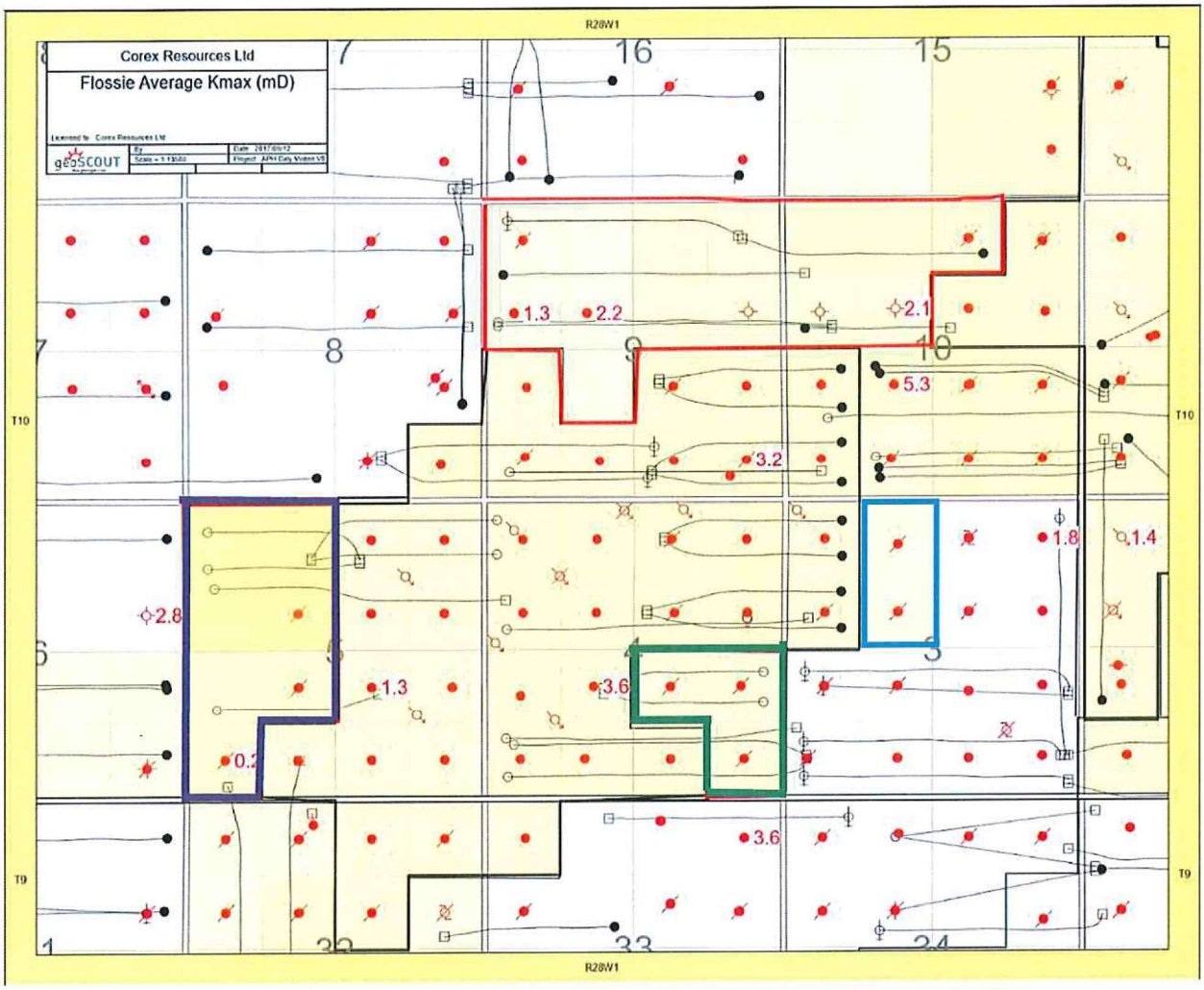
Proposed Daly Unit No. 15
Proposed Daly Unit No. 16
Proposed Daly Unit No. 17
Proposed Daly Unit No. 18

Appendix XVI – Flossie Lake – Porosity-Thickness



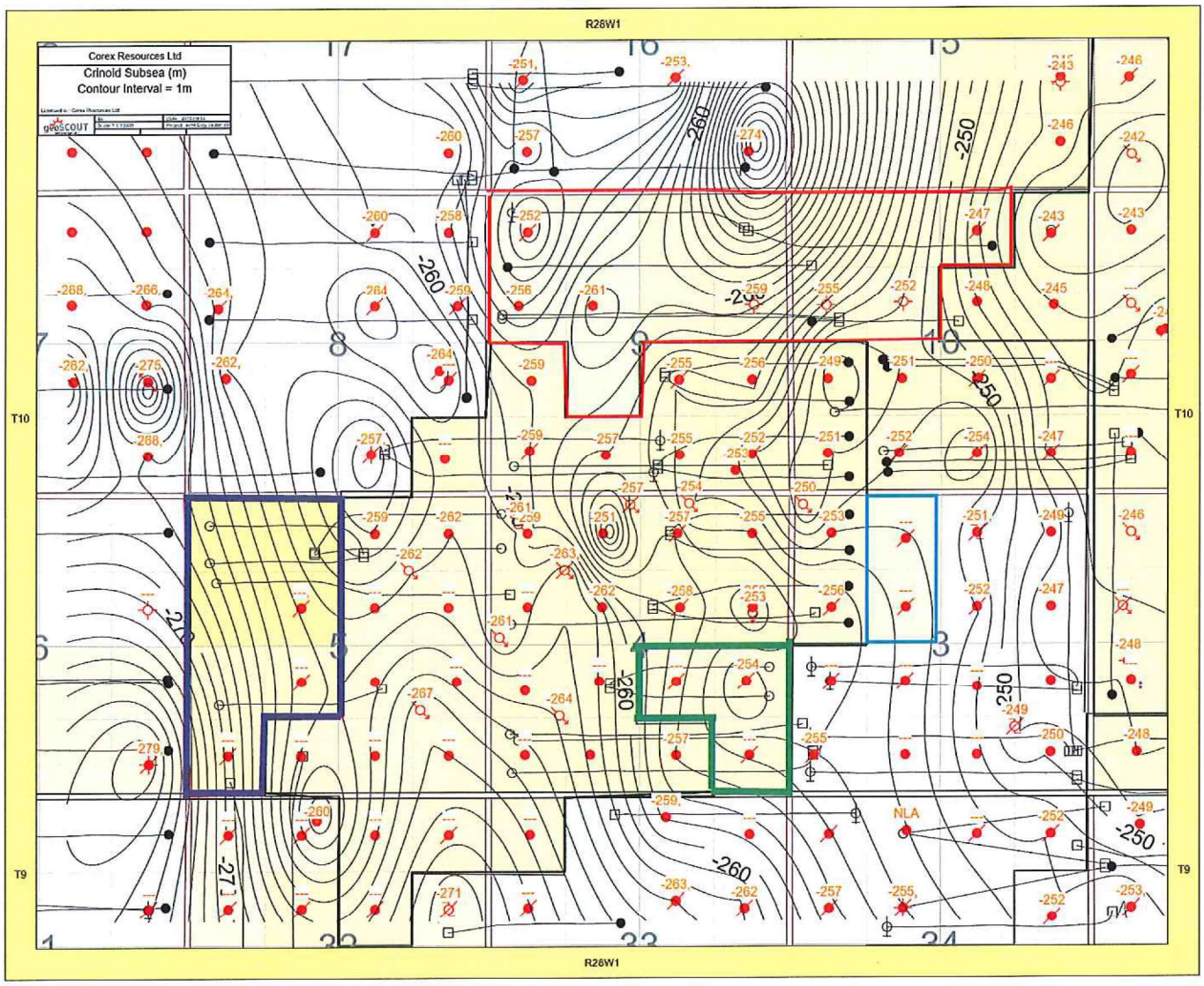
Proposed Daly Unit No. 15
Proposed Daly Unit No. 16
Proposed Daly Unit No. 17
Proposed Daly Unit No. 18

Appendix XVII – Flossie Lake – Permeability



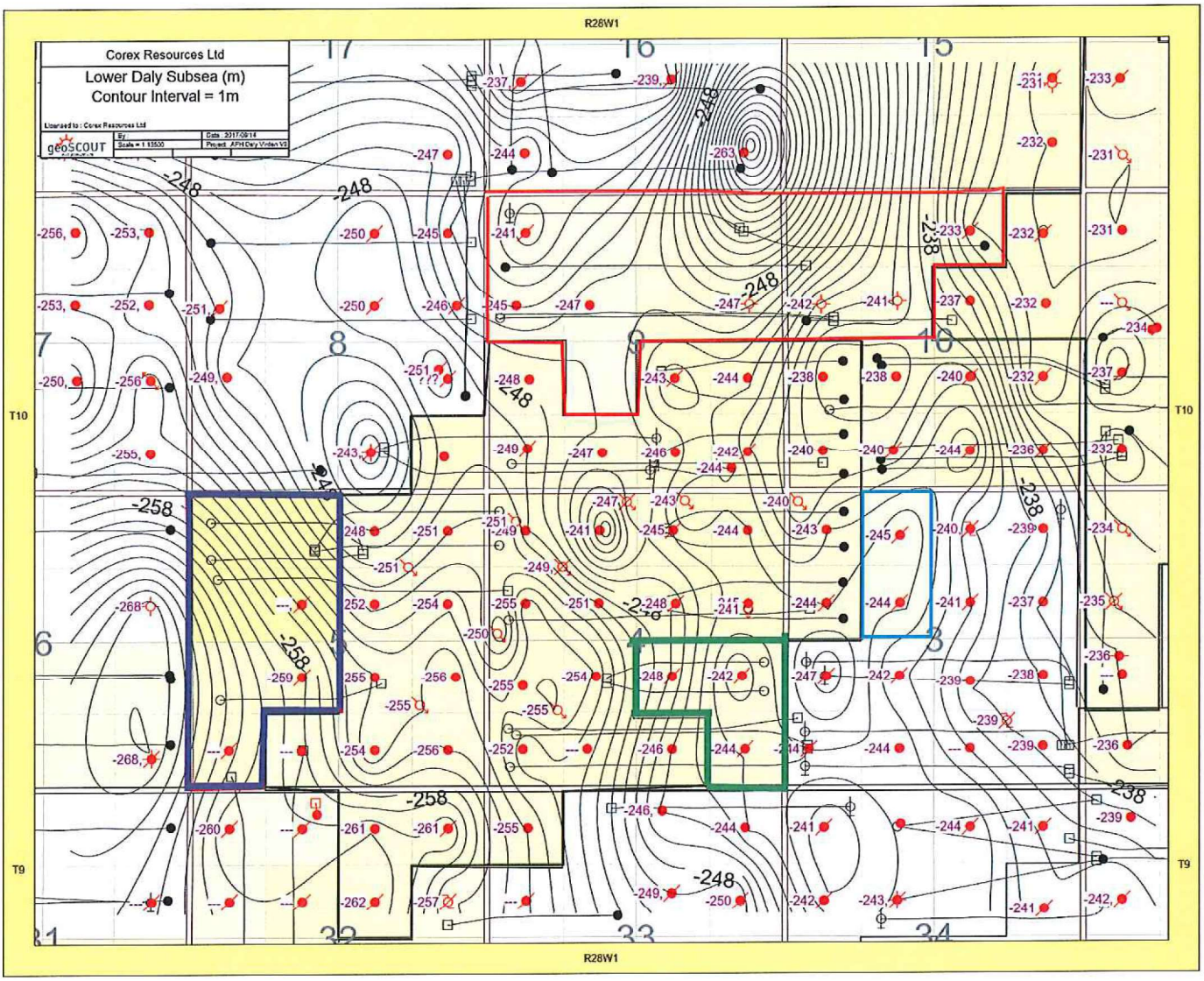
Proposed Daly Unit No. 15
Proposed Daly Unit No. 16
Proposed Daly Unit No. 17
Proposed Daly Unit No. 18

Appendix XVIII – Crinoidal – Top of Structure



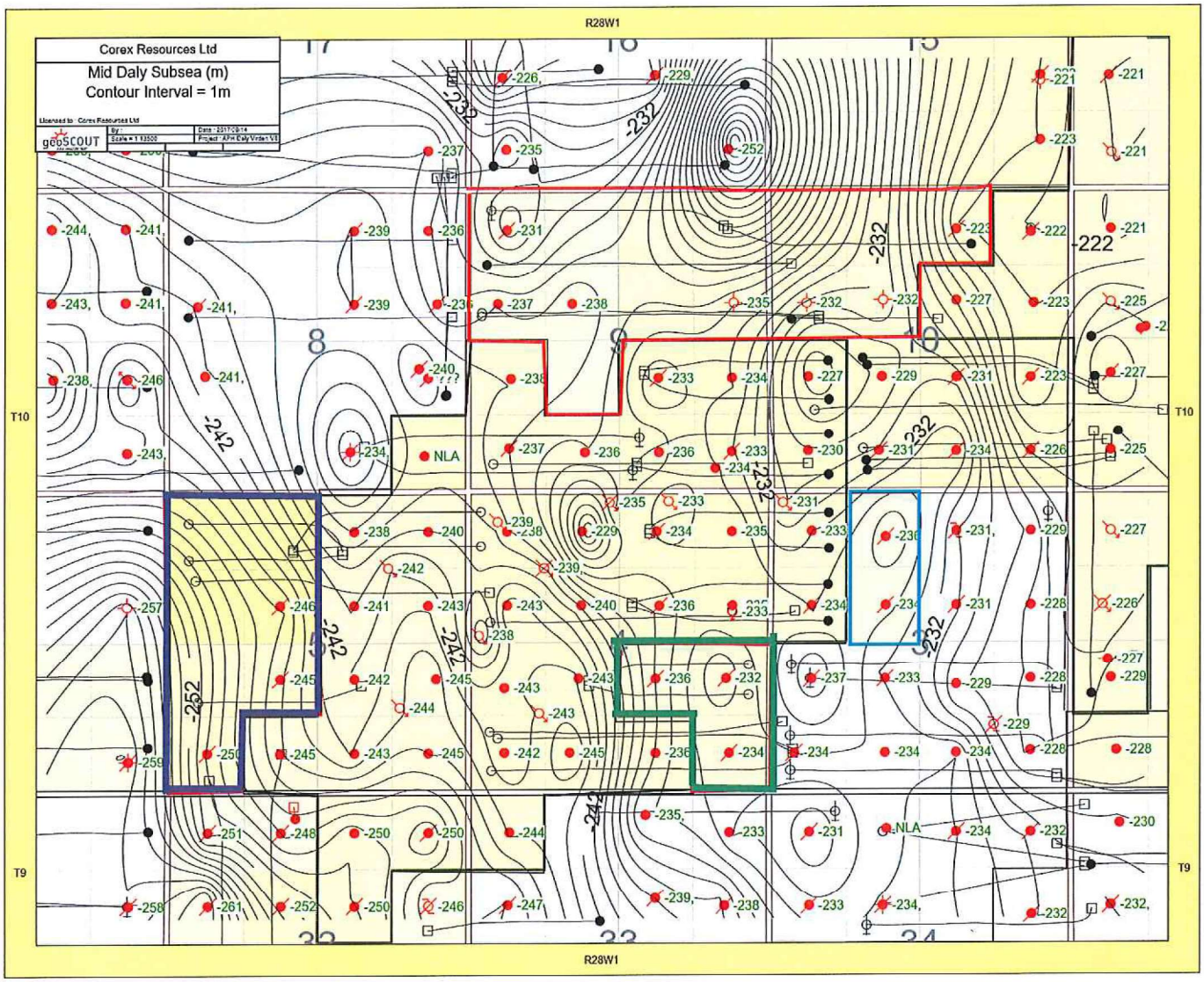
Proposed Daly Unit No. 15
Proposed Daly Unit No. 16
Proposed Daly Unit No. 17
Proposed Daly Unit No. 18

Appendix XIX – Lower Daly – Top of Structure



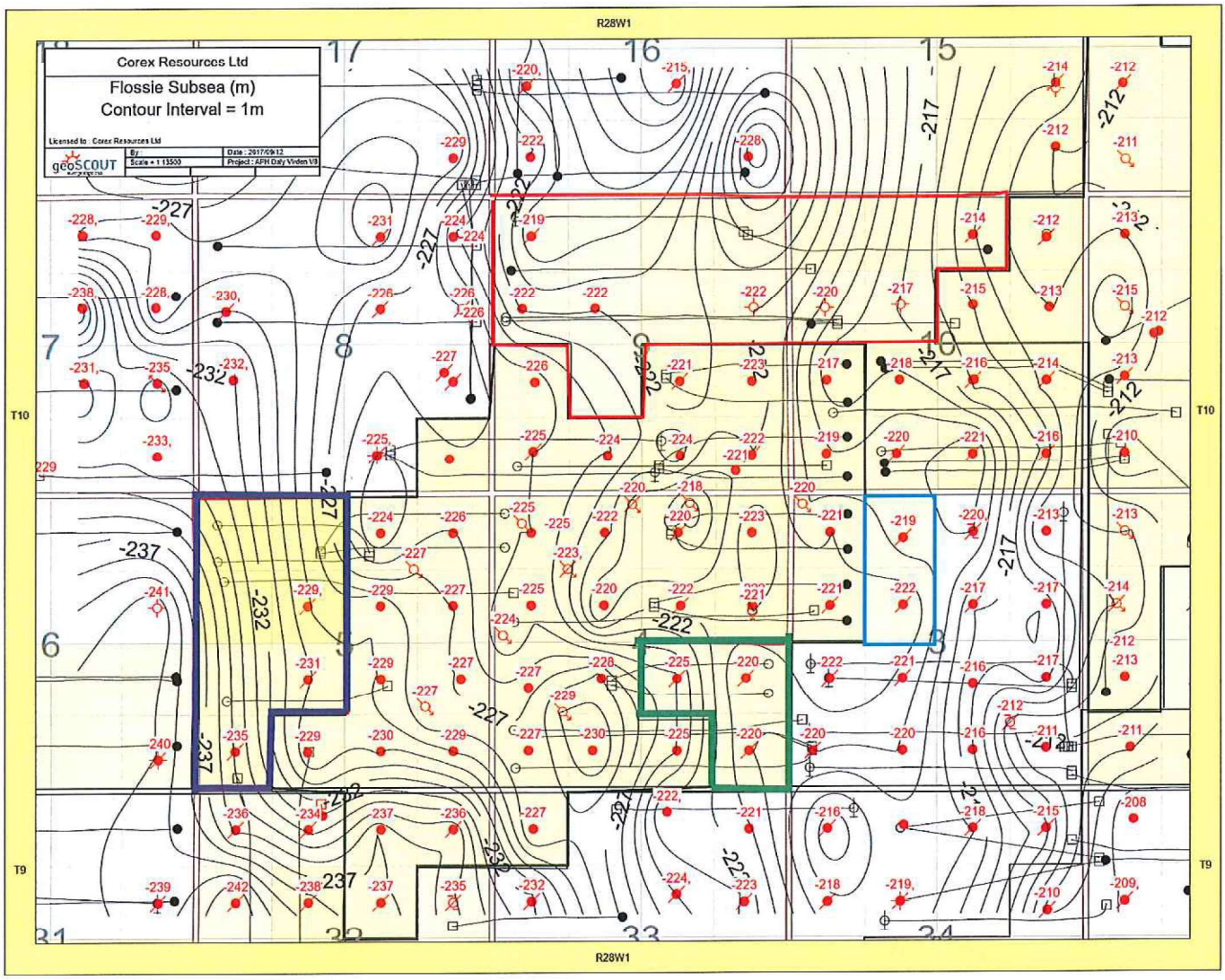
Proposed Daly Unit No. 15
Proposed Daly Unit No. 16
Proposed Daly Unit No. 17
Proposed Daly Unit No. 18

Appendix XX – Middle Daly – Top of Structure



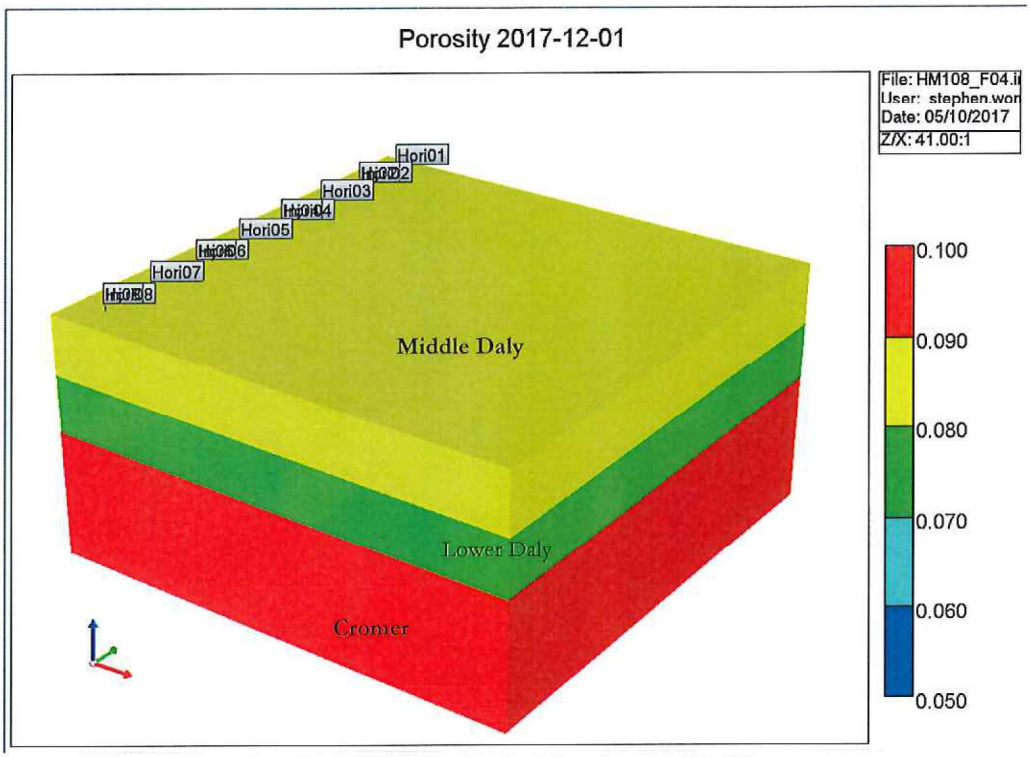
Proposed Daly Unit No. 15
Proposed Daly Unit No. 16
Proposed Daly Unit No. 17
Proposed Daly Unit No. 18

Appendix XXI – Flossie Lake – Top of Structure

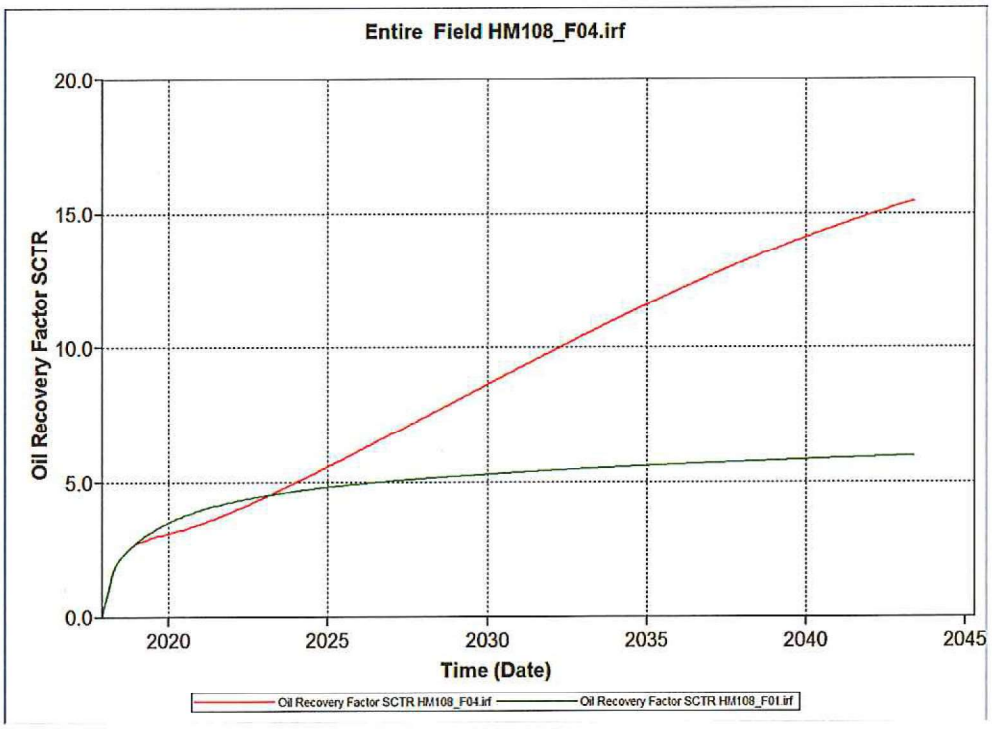


Proposed Daly Unit No. 15
Proposed Daly Unit No. 16
Proposed Daly Unit No. 17
Proposed Daly Unit No. 18

Appendix XXII – Daly Members – Section Model



Section Model – Daly Members– 3D View



Section Model – Daly Members – Primary and Secondary Forecast – Oil Recovery Factor versus Time -This Model Was Used to Scale Results for the Daly Unit No. 15 Area